Organic Electroluminescent Device Based On 2,5-Diaminoterephthalic Acid Derivatives

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority of German patent application no. DE 10141266.5, filed August 21, 2001, and international patent application no. PCT/DE02/03110 (entitled Organic Electroluminescent Device Based on 2,5-Diaminoterephthalic Acid Derivatives), filed August, 2002, the entire disclosures of which are incorporated herein by reference and for all purposes.

[0002] The present application relates to a new organic electroluminescent device based on 2,5-diaminoterephthalic acid derivatives. Said derivatives are emitter substances for organic light-emitting diodes (OLED). Organic light-emitting diodes, which have long been known, use the electroluminescence of certain organic compounds. An OLED's structure and the tasks of its individual layers are exemplified in Fig. 1. A layer sequence of organic substances is arranged between two electrodes, of which at least one must be translucent, each organic substance having a specific function within the device.

- The cathode consists of a base metal or an alloy (e.g. aluminium or calcium) and has the function of injecting electrons;
- The buffer layer consists of certain metal salts or the oxides thereof, e.g. LiF, and has the function of improving the electron injection into the layer 3;
- The electron conductor can e.g. consist of Alq3 (tris-(8-hydroxychinolinato)-aluminium) and conducts the electrons from the cathode to the emitting layer or the hole conductor inside the device;
- The hole conductor mainly consists of triphenylamine derivatives; several hole conductor layers can be provided whose characteristics are adapted to the device and whose function is to transport the holes to the emitting layer;
- The anode consists of ITO which injects the holes into the hole transport layer;
- The substrate consists of a transparent material, e.g. glass.

[0003] An arrangement of the type described above emits green light generated due to the excitation of Alq3 by the excitons formed from the holes and electrons.

[0004] However, such a simple arrangement has several drawbacks:

1. Alq3 only emits light in the green spectral range;
2. The emission band of Alq3 is too broad.

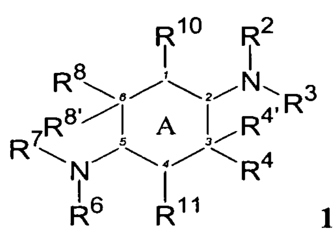
[0005] Said drawbacks can in part be eliminated by doping. This means that one or more substances are co-evaporated during the diode's production process. In general, these substances are contained in the Alq3 layer in an amount ranging up to a few percent. Said co-evaporation process is difficult to control.

[0006] This application relates to new emitter substances which eliminate the known drawbacks of Alq3 both as an emitter substance and a host material for dopants. As a consequence, Alq3 is generally required as an electron conductor only. The new emitter substances are characterized by:

1. narrower emission bands;
2. the devices cover a broad spectral range due to the fact that different substances are used, either in layers separated from one another or in mixed layers;
3. low driver voltages;
4. high photometric efficiency (low power consumption);
5. high luminance (emission intensity);
6. high thermal stability.

[0007] For the purposes of this application, the term "device" relates to an arrangement in which the substrate and layers are arranged on top of one another according to Fig. 1 or 2, but which has not yet been incorporated into a light-emitting diode. Such a device can in principle have the structure shown in Fig. 1 or 2. In said devices, the 2,5-diaminoterephthalic acid derivatives can be co-evaporated either alone or conjointly with other compounds, optionally even with known compounds, to obtain emitters. These emitters are used in combination with known hole conductors.

[0008] The present application provides new organic electroluminescent devices using improved emitter substances. According to one embodiment, the organic electroluminescent device contains 2,5-diaminoterephthalic acid derivatives of the following formula **1a** in one or several emitter layers in a pure or doped form in a device



1a

wherein the ring A is a triply unsaturated benzene ring wherein $R^{4'}$ and $R^{8'}$ are omitted, or the ring A is a doubly unsaturated ring having a double bond in the 1,2-position and in the 4,5-position, and

wherein R^{10} represents a nitrile radical -CN or a radical $-C(=X^1)-X^2R^1$,

R^{11} is a nitrile radical -CN or a radical $-C(=X^3)-X^4R^5$,

wherein

X^1 and X^3 can be the same or different atoms or groups, such as oxygen, sulphur, imino, preferably oxygen;

X^2 and X^4 can be the same or different atoms or groups, such as oxygen, sulphur, amino, wherein the amino nitrogen can be substituted with alkyl having 1 to 20 C-atoms, preferably C1 to C8, or with aryl, e.g. phenyl, naphthyl, or with heteroaryl, e.g. cumaryl, pyridyl, chinolyl, indolyl, carbazolyl, imidazolyl, thienyl, thiazolyl, furyl, oxazolyl;

R^1 to R^8, $R^{4'}$ and $R^{8'}$ can be the same or different substituents, such as hydrogen, alkyl having 1 to 20 atoms, preferably C1 to C8; aryl, e.g. phenyl, naphthyl, as well as heteroaryl, e.g. cumaryl, pyridyl, chinolyl, indolyl, carbazolyl, imidazolyl, thienyl, thiazolyl, furyl, oxazolyl, and the aforesaid radicals can be substituted singly or doubly with atoms or groups, e.g. di-C1-C3-amino or alkoxy with alkyl radicals C1 to C10, preferably C1-C4; C1-C4 alkyl, cyano, fluorine, chlorine, bromine or iodine as well as phenyl;

R^4 and R^8 can also be the same or different substituents, such as halogen, nitro, cyano or amino;

R^2 to R^4, R^6 to R^8, $R^{4'}$ and $R^{8'}$ can also be trifluoromethyl or pentafluorophenyl,

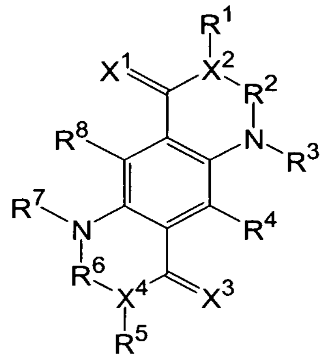
and wherein the following radicals can form a saturated or unsaturated ring

X^1 and X^2, R^1 and R^2, R^2 and X^2, R^2 and R^3, R^3 and R^4, R^4 and X^3, X^3 and X^4, R^5 and X^4, R^6 and X^4, R^6 and R^7, R^7 and R^8, R^8 and X^1, R^3 and $R^{4'}$, R^7 and $R^{8'}$, R^4 and $R^{4'}$, and R^8 and $R^{8'}$, to which rings further rings can be fused.

[0009] It is preferred that R^2, R^3, R^6 and R^7 be trifluoromethyl or pentafluorophenyl, R^4 and R^8 be halogen, nitro, cyano or amino, and the other substituents have the meaning indicated above. It is particularly preferred that R^4 and R^8 be trifluoromethyl or pentafluorophenyl, and the other substituents have the meaning indicated above.

[0010] As regards spelling in the following text, R^{1-8} means R^1 to R^8; $X^{2,4}$ means X^2 and X^4; $R^{4',8'}$ means $R^{4'}$ and $R^{8'}$.

[0011] The application also relates to new 2,5-diaminoterephthalic acid derivatives of the formula **19**



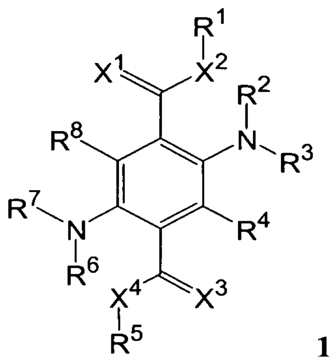
19

wherein X^1 is O and X^2 is O or N; R^2 and R^6 are methylene ($-CH_2-$) which can be substituted with trifluoromethyl, R^3 and R^7 are the same or different, H, C1-C8 alkyl, aryl or heteroaryl, and R^4 and R^8 are the same or different, H, alkyl, aryl or trifluoromethyl.

[0012] It is particularly preferred that alkyl be C1-C4 alkyl, aryl be phenyl or naphthyl, and heteroaryl be pyridyl, thienyl or furyl.

[0013] In general, it is preferred that substituents arranged opposite one another, such as X^1 and X^3, X^2 and X^4, R^1 and R^5, R^2 and R^6, R^3 and R^7, R^4 and R^8, $R^{4'}$ and $R^{8'}$, and R^{10} and R^{11}, are the same, i.e. not different, in the structures described herein. The electroluminescent devices according to one embodiment preferably contain 2 to 3 different substances which are mixed with one another in one device.

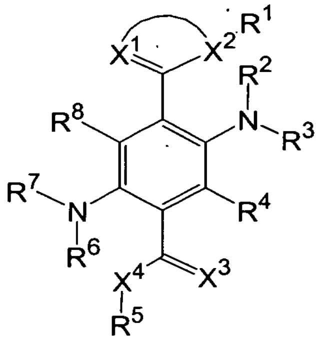
[0014] Now, preferred structures will be listed, wherein in the structures **1**



1

X^1 and X^2 can be members of a ring provided $X^1 = N$ and there is no substituent R^1 in case $X^2 \neq N$;

X^2 and R^1 can be members of a ring provided $X^2 = N$;



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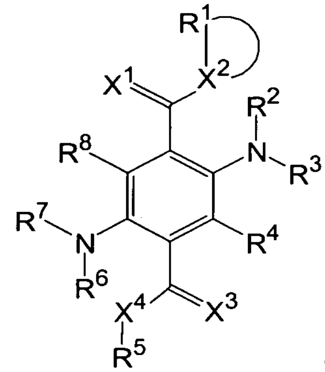
X^2 and R^2 can be members of a ring provided $X^2 = N$;



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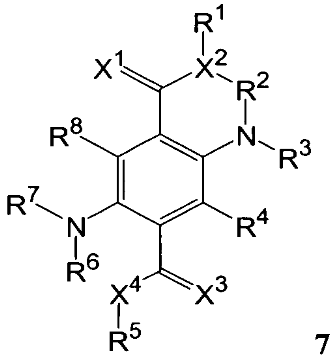
R^2 and R^3 can be members of a ring;



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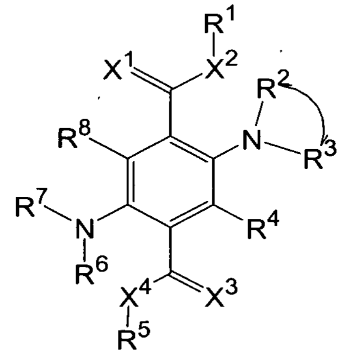
R^3 and R^4 can be members of a ring;



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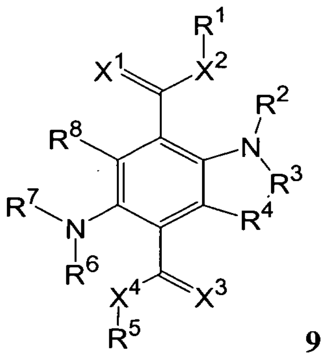
R^4 and X^3 can be members of a ring provided $X^3 = N$;



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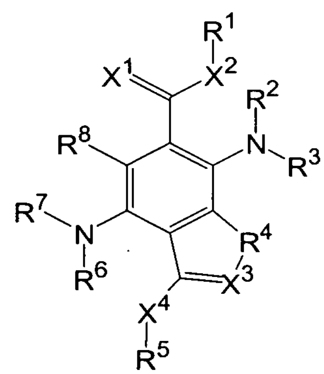
X^3 and X^4 can be members of a ring provided $X^3 = N$ and there is no substituent R^1 in case $X^4 \neq N$;



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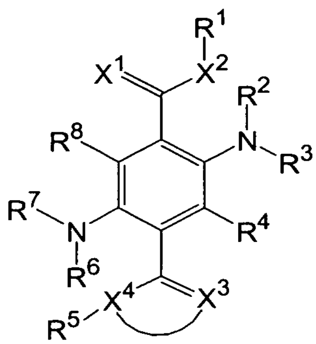
X^4 and R^5 can be members of a ring provided $X^4 = N$;



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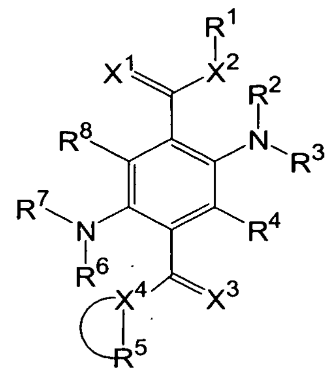

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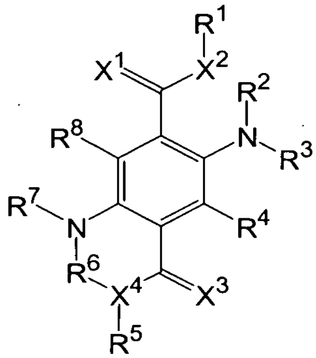
X^4 and R^6 can be members of a ring provided $X^4 = N$;

R^6 and R^7 can be members of a ring;



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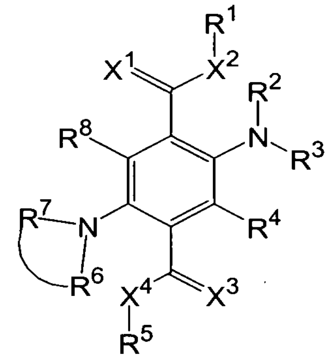

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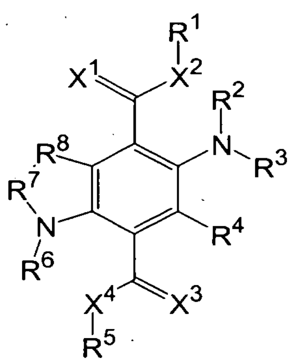
R^7 and R^8 can be members of a ring;

R^8 and X^1 can be members of a ring provided $X^1 = N$;



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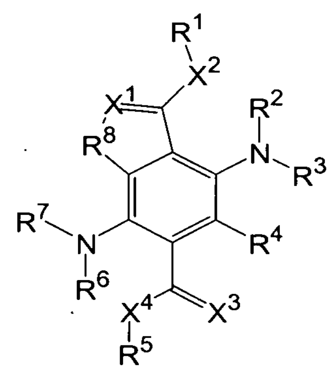

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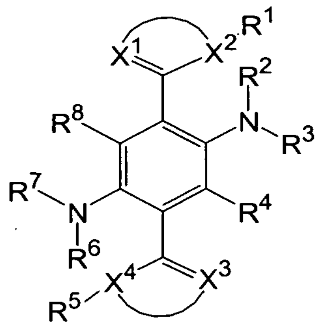
wherein symmetric combinations of the aforesaid structural types are preferred

X^1 and X^2 as well as X^3 and X^4 can be members of a ring provided $X^{1,3} = N$ and there is no substituent $R^{1,5}$ in case $X^{2,4} \neq N$;

X^2 and R^1 can be members of a ring provided $X^{2,4} = N$;



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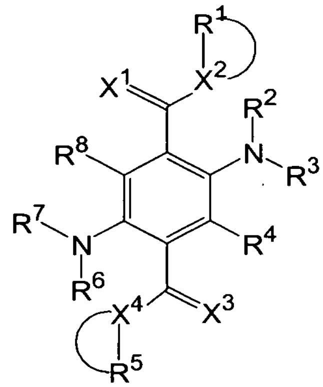

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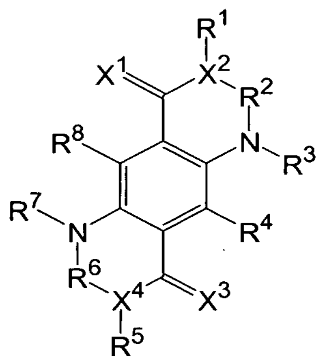
X^2 and R^2 as well as X^4 and R^6 can be members of a ring provided $X^{2,4} = N$;

R^2 and R^3 as well as R^6 and R^7 can be members of a ring;



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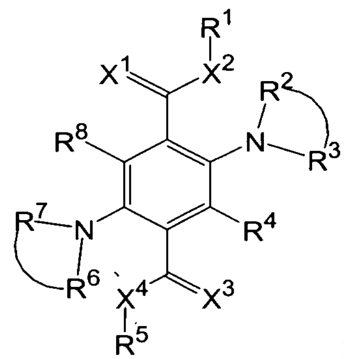

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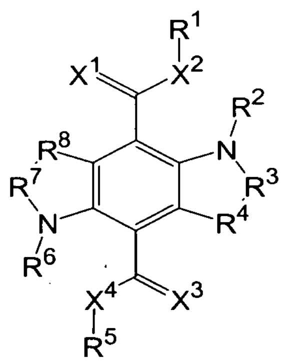
R^3 and R^4 as well as R^7 and R^8 can be members of a ring;

R^4 and X^3 as well as R^8 and X^1 can be members of a ring provided $X^{1,3} = N$;



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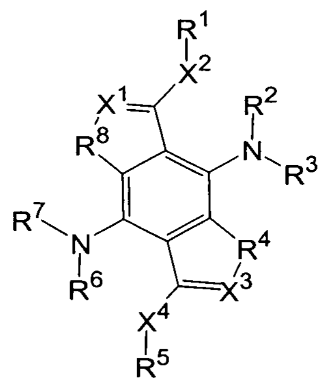

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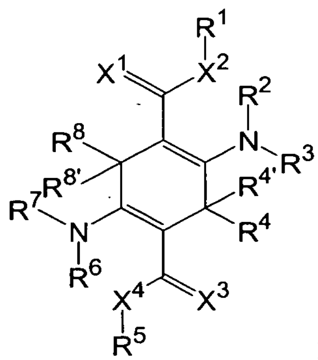
and wherein in the structures 2



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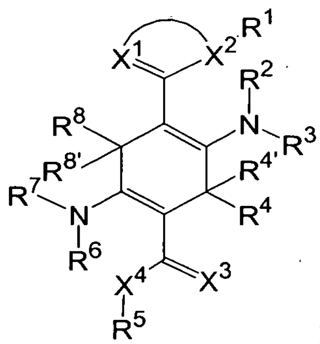
X^1 and X^2 can be members of a ring provided $X^1 = N$ and there is no substituent R^1 in case $X^2 \neq N$;



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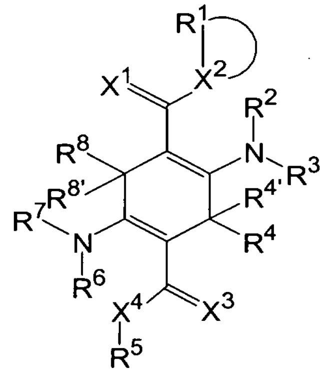
X^2 and R^1 can be members of a ring provided $X^2 = N$;



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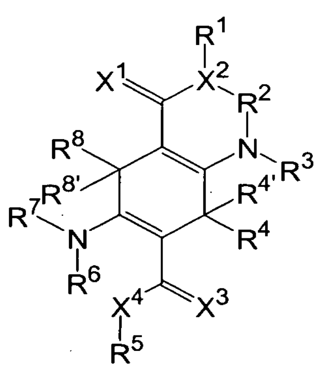
X^2 and R^2 can be members of a ring provided $X^2 = N$;



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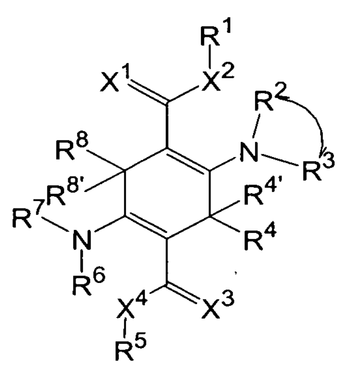
R^2 and R^3 can be members of a ring;



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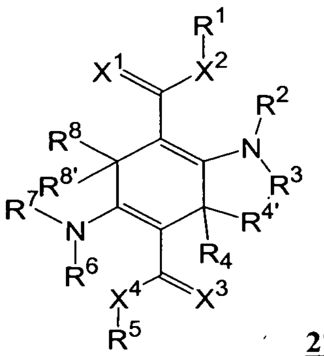
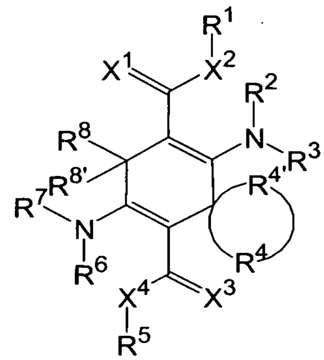
R^3 and R^4 can be members of a ring;

R^4 and $R^{4'}$ can be members of a ring;



27

R^4 and X^3 can be members of a ring provided $X^3 = N$;



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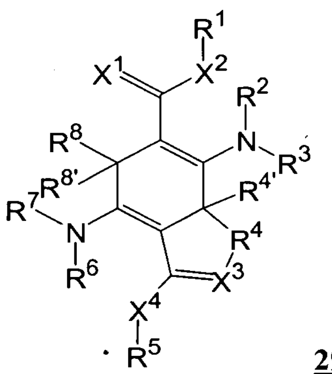
X^3 and X^4 can be members of a ring provided $X^3 = N$ and there is no substituent R^5 in case $X^4 \neq N$;



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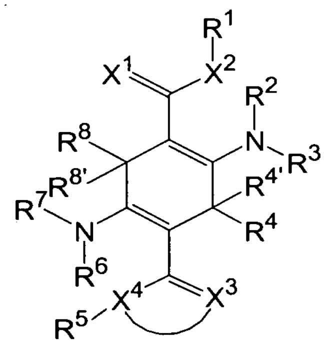
X^4 and R^5 can be members of a ring provided $X^4 = N$;



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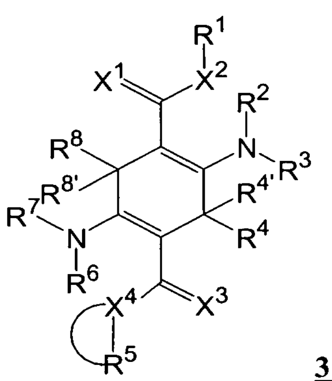
X^4 and R^6 can be members of a ring provided $X^4 = N$;



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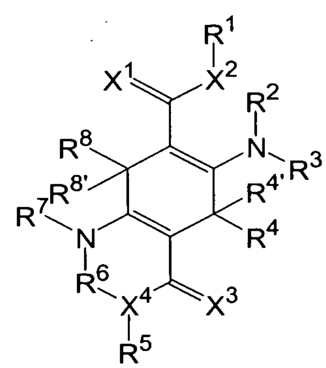
R^6 and R^7 can be members of a ring;



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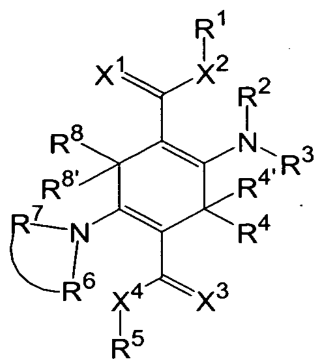
R^7 and R^8 can be members of a ring;



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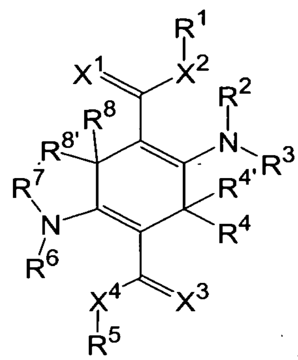
R^8 and $R^{8'}$ can be members of a ring;



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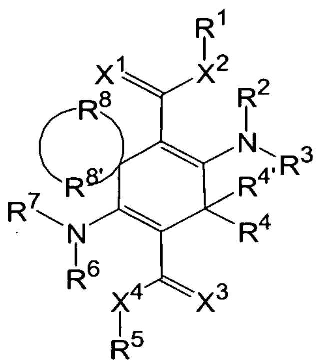
R^8 and X^1 can be members of a ring provided $X^1 = N$;



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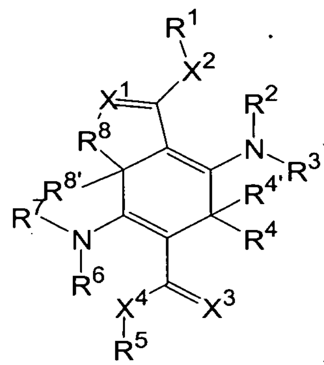
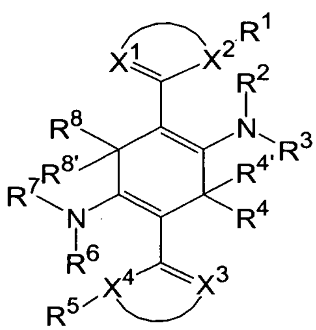


36

wherein symmetric combinations of the aforesaid structural types are preferred

X^1 and X^2 as well as X^3 and X^4 can be members of a ring provided $X^{1,3} = N$ and there is no substituent $R^{1,5}$ in case $X^{2,4} \neq N$;

X^2 and R^1 can be members of a ring provided $X^{2,4} = N$;



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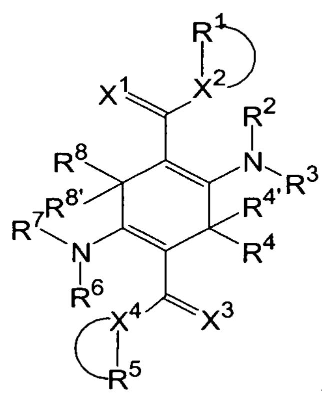

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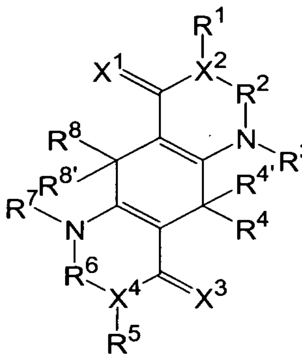
X^2 and R^2 as well as X^4 and R^6 can be members of a ring provided there is no substituent $R^{1,5}$ in case $X^{2,4} \neq N$;

R^2 and R^3 as well as R^6 and R^7 can be members of a ring;



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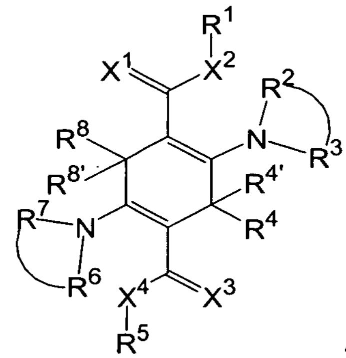
R^3 and $R^{4'}$ as well as R^7 and $R^{8'}$ can be members of a ring;



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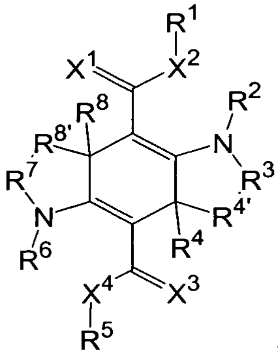
R^4 and $R^{4'}$ as well as R^8 and $R^{8'}$ can be members of a ring;



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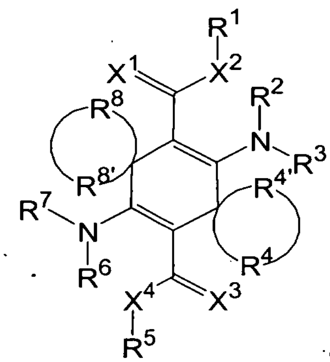
R^4 and X^3 as well as R^8 and X^1 can be members of a ring provided $X^{1,3} = N$;



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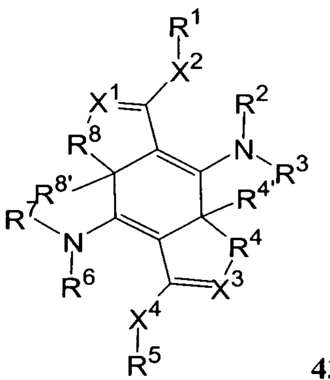

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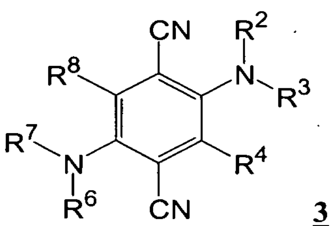
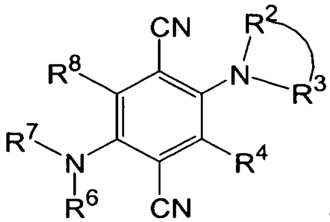
and wherein in the structures **3**



3

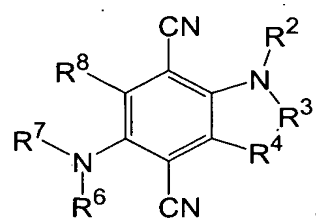
R^2 and R^3 can be members of a ring;

R^3 and R^4 can be members of a ring;



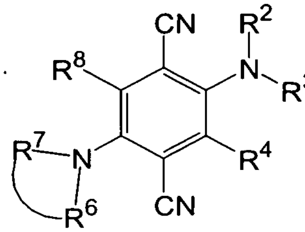
44

R^6 and R^7 can be members of a ring;



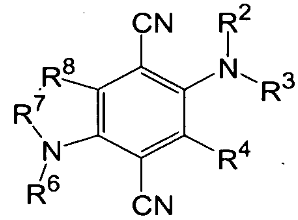
45

R^7 and R^8 can be members of a ring;



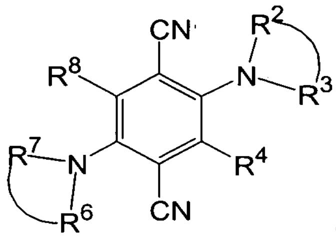
46

R^2 and R^3 as well as R^6 and R^7 can be members of a ring;

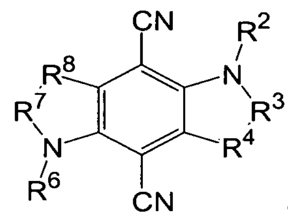


47

R^3 and R^4 as well as R^7 and R^8 can be members of a ring;

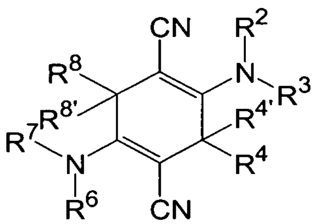


48



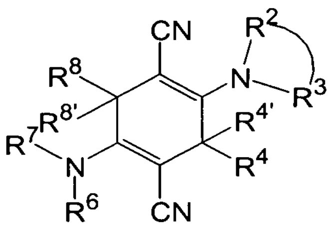
49

and wherein in the structures **4**



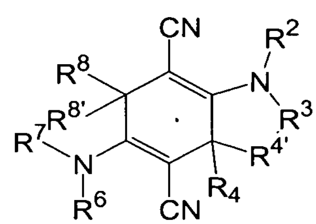
4

R^2 and R^3 can be members of a ring;



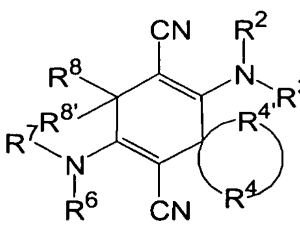
50

R^3 and $R^{4'}$ can be members of a ring;



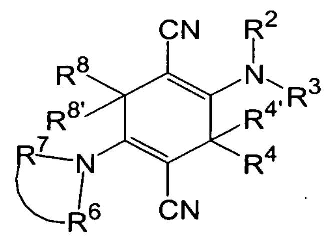
51

R^4 and $R^{4'}$ can be members of a ring;



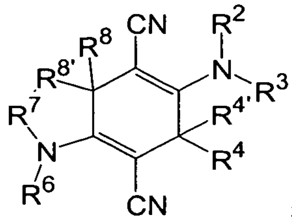
52

R^6 and R^7 can be members of a ring;



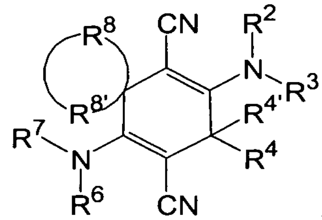
53

R^7 and $R^{8'}$ can be members of a ring;



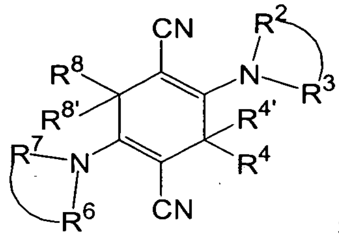
54

R^8 and $R^{8'}$ can be members of a ring;



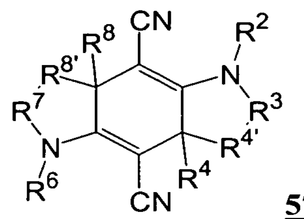
55

R^2 and R^3 as well as R^6 and R^7 can be members of a ring;



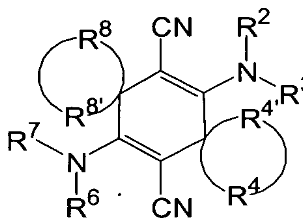
56

R^3 and $R^{4'}$ as well as R^7 and $R^{8'}$ can be members of a ring;



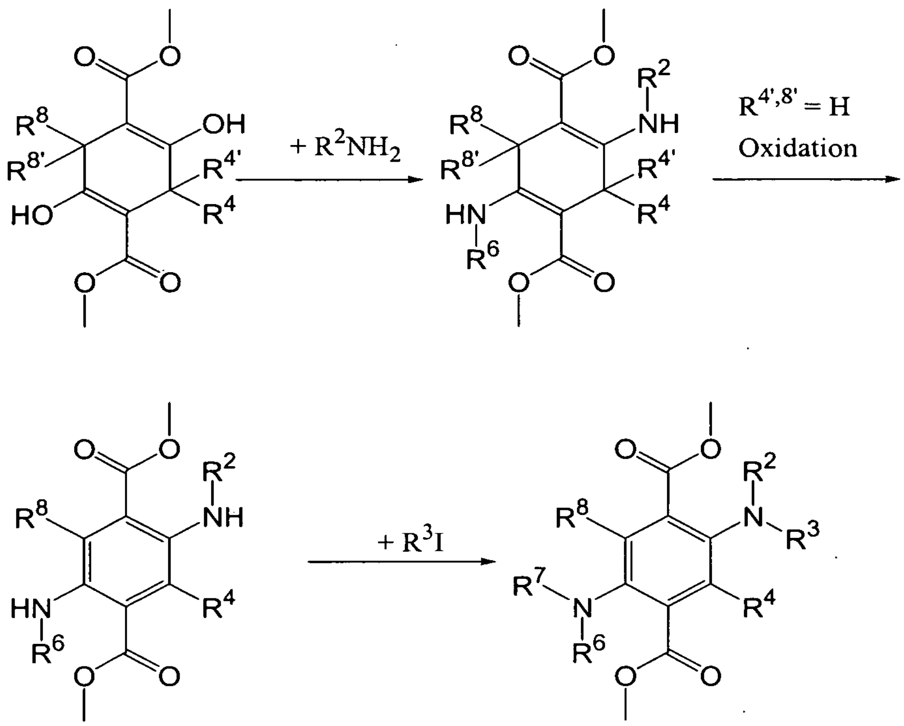
57

R^4 and $R^{4'}$ as well as R^8 and $R^{8'}$ can be members of a ring;

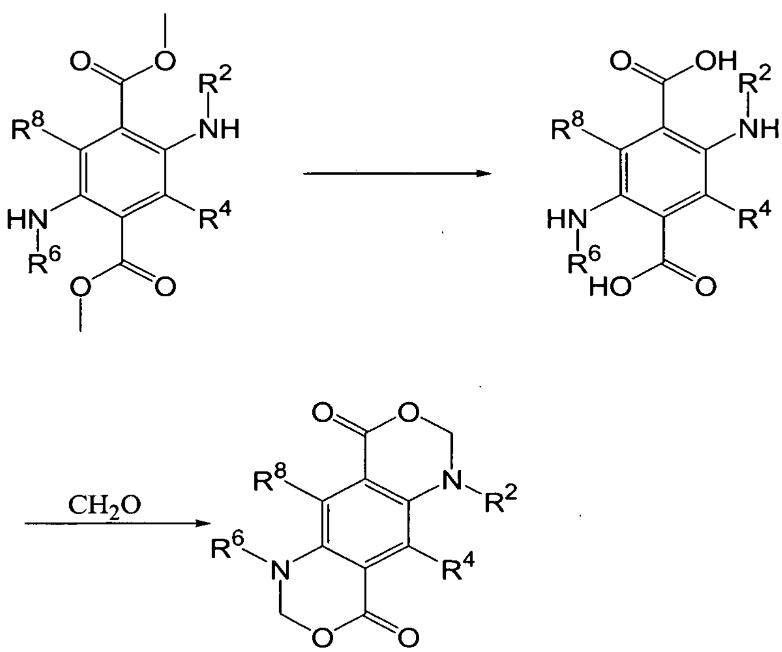


58

[0015] The emitter substances of formula **1**, i.e. derivatives of 2,5-diaminoterephthalic acid, can be obtained by reacting esters of cyclohexane-2,5-dione-1,4-dicarboxylic acid with primary anilines or amines, subsequent oxidation and, optionally, further modification. Said derivatives can be processed into cyclized derivatives in a manner known per se, as shown e.g. in Formula Diagrams I and II.



Formula Diagram I: Synthesis of the open compounds



Formula Diagram II: Synthesis of the cyclized compounds

[0016] The compounds of formula **3** can be produced by reacting the respective 2,5-diaminoterephthalic acid amides with dehydrating agents.

[0017] In order to produce the compounds of formula **4**, wherein R^4 and R^8 as well as $R^{4'}$ and $R^{8'}$ are not H, the esters of 2,5-diaminocyclohexane-1,4-dicarboxylic acid are converted into hydrazides and reacted with potassium hexacyanoferrate(III) in order to obtain aldehydes. These 2,5-diaminocyclohexane-1,4-dicarbaldehydes can be converted into oximes which are reacted with formic acid in order to obtain the compounds of formula **4**.

[0018] Examples of the new emitters according to formula **1** are listed in Table 1 below.

[0019] The new emitters are used in a device comprising or not comprising an electron transport layer, wherein the layers in a device can be arranged as shown in Fig. 2:

1. The substrate consists of a transparent material, e.g. glass;
2. The anode consists of ITO which injects the holes into the hole transport layer;

3./4. The hole conductor mainly consists of triphenylamine derivatives; several hole conductor layers can be provided whose characteristics are adapted to the device;

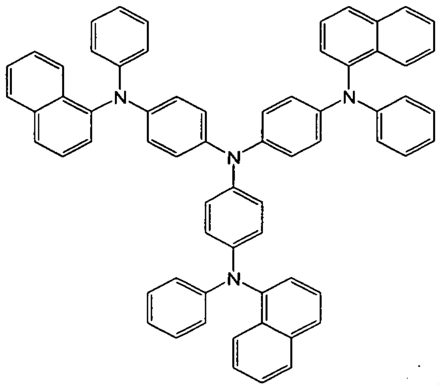
5. Between the hole conductor and the electron conductor, one or more emitter layers are arranged;
6. The electron conductor can e.g. consist of Alq3 and conducts the electrons from the cathode to the emitting layer or the hole conductor inside the device;
7. The buffer layer consists of certain metal salts or the oxides thereof, e.g. LiF, and improves the electron injection into the layer 6;
8. The cathode consists of a base metal or an alloy (e.g. aluminium or calcium).

[0020] Typically, the emitter layers are 3-10 nm thick, preferably 4-6 nm. The emission wavelengths depend on the chemical structure in a characteristic manner, i.e. electronic and steric factors of the molecules obviously influence the wavelength of the emitted light and the performance achieved. The wavelengths of the examples listed in Table 2 range between 538 nm and 618 nm.

[0021] In order to achieve mixed colours, the new emitters of formulas **1.0-58.0** can be arranged on top of one another, either in the form of several layers each of which consists of an emitter material in its pure form (Fig. 2) or in the form of one or several layer(s) in which the emitter materials are provided in a mixed form.

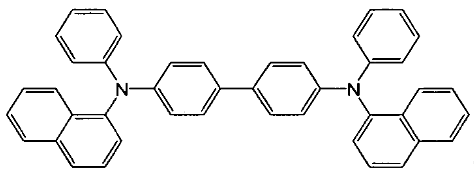
[0022] The layers comprising the new emitters of formulas **1.0-58.0** can be doped with known emitter materials, as shown in Fig. 1.

[0023] The new emitters of formulas **1.0-58.0** can be used in devices comprising hole conductors known per se (**59** and **60**) and other components. Typical examples are shown in Figs. 1 and 2.



59

4,4',4"-tris(N-(α-naphthyl)-N-phenylamino)-triphenylamine (1-NAPHDATA)



60

N,N'-di(α-naphthyl)-N,N'-diphenylbenzidine (α-NPD)

[0024] The devices based on the new emitters can be produced in a manner known per se, i.e. by vacuum deposition at between 1 and 10^{-9} torrs.

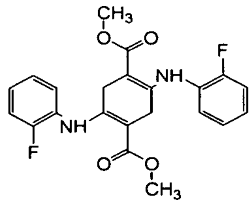
[0025] Alternatively, the devices can be produced by solution coating, e.g. web coating or spin coating. Here, the new emitters of formulas **1.0-58.0** can be applied either as the pure substance or as a dopant contained in a suitable polymer.

[0026] Surprisingly, it has been found that particularly efficient devices can be produced using substances of the formula **1.0** which have been substituted with fluorine. A remarkably high photometric efficiency is observed in these cases. Using the substance **1.2**, a device emitting a spectrally nearly pure green is obtained.

Experimental part

[0027] The following examples are intended to illustrate the present invention in more detail, but do by no means limit the same.

Example 1 (Substances **2.1**, **2.3-2.5**)

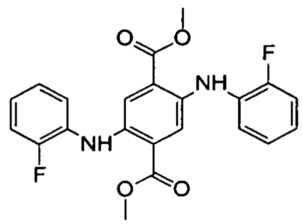


2.3

[0028] 0.06 mol cyclohexane-2,5-dione-1,4-dicarboxylic acid diester is suspended in a mixture of 200 ml glacial acetic acid and 200 ml alcohol (corresponding to the ester component). In a nitrogen atmosphere, 0.135 mol of a primary amine or aniline is speedily added. The reaction mixture is refluxed for 5-8 hours while stirring thoroughly. Anilines which have been substituted with an acceptor require longer reaction times.

[0029] In the case of anilines, the crude product can be isolated by sucking off the cooled-down reaction mixture, thoroughly washing it with methanol and drying. Aliphatic amines form highly soluble products, i.e. the solvent must be separated almost completely using a rotary evaporator. The crude product is added into methanol, thoroughly cooled, sucked off and dried.

Example 2 (Substances **1.1**, **1.3**-**1.5**)



1.3

[0030] The esters of dihydroterephthalic acid obtained in Example 1 are oxidized. Yields of up to 95% are achieved during isolation. In order to purify the separated crude product, it can be recrystallized from DMF, toluene, chloroform or methanol. The substances obtained are sublimable.

Example 3 (Substances **19.1**-**19.4**)

[0031] The esters obtained according to Example 2 are saponified in mixtures of n-propanol and water. 0.01 mol terephthalic acid diester is suspended in approx. 50 ml n-propanol, and 50 ml water containing 0.03 mol potassium hydroxide is added. The suspension is refluxed until a clear solution is obtained. Once another 2 hours have passed, the liquid is sucked off. In order to neutralize the solution, approx. 5 ml glacial acetic acid is added dropwise. The acid obtained is washed with methanol and dried.

[0032] In order to produce the substances **19.1**-**19.4**, 0.01 mol of the terephthalic acid obtained is refluxed for 2 hours in 100 ml glacial acetic acid to which 15 ml formaldehyde solution (37%) has been added. The reaction products are separated and washed with methanol. They are recrystallized from acetonitrile or chloroform. The substances obtained can be purified by sublimation.

Example 4 (Substance **1.2**)

[0033] In order to obtain compounds of this type, the respective terephthalic acid ester (Example 2) can be alkylated. 0.05 mol terephthalic acid ester is suspended in 350 ml anhydrous DMSO, and 18.63 g (0.131 mol) methyl iodide is added. 6.1 g (0.152 mol) 60% sodium hydride in paraffin is added in portions at a temperature ranging between 20 and 23° C and while stirring thoroughly. Once a reaction time of approx. 5 hours has passed, the colour of the solid constituents has changed from orange to pure yellow. Now, approx. 200 ml methanol is added to the mixture, thereby considerably improving filterability.

[0034] The separated yellow reaction product is thoroughly washed with methanol and dried. A pure product is obtained by recrystallization from toluene.

Example 5 (Device: substance **19.4**)

[0035] A 55 nm thick layer of 4,4',4"-tris(N-(α-naphthyl)-N-phenylamino)-triphenylamine and another 5 nm thick layer of N,N'-di(α-naphthyl)-N,N'-diphenylbenzidine were deposited onto a structured ITO glass substrate measuring 50 x 50 mm^2. Onto these hole transport layers, 5 nm 1,6-bis(2,4-dimethoxyphenyl)-benzo[1,2-d;4,5-d']-1,2,6,7-tetrahydro-bis[1,3]oxazine-4,9-dione (**19.4**) is deposited.

[0036] In addition, a 30 nm thick layer of tris-(8-hydroxychinolinato)-aluminium is now applied onto this emitter layer, followed by a very thin buffer layer (0.5 nm) of lithium fluoride and finally aluminium. The arrangement was tested applying an adjustable voltage between 0 and 15 V. The device emits a wavelength of 578 nm (yellow). A luminance (emission intensity) of 100 cd/m^2 was achieved at 5.0 V. The maximum luminance (emission intensity) achieved was 11,400 cd/m^2.

Example 6 (Device: substance **1.21**)

[0037] A device was produced according to Example 5, into which a 5 nm thick layer of 2,5-bis-(N-(2,4-dimethoxyphenyl)amino)terephthalic acid diethyl ester was incorporated as emitter substance between the hole conductor and the electron conductor. The device was also tested applying an adjustable voltage between 0 and 15 V. The device emits a wavelength of 618 nm (red). A luminance (emission intensity) of 100 cd/m^2 was achieved at 9.5 V. The maximum luminance (emission intensity) achieved was 644 cd/m^2.

Example 7 (Device: substance **1.5**)

[0038] The device has the same structure as those of Examples 5 and 6. The emitter substance used was 2,5-bis-(N-phenylamino)-terephthalic acid diethyl ester. Once again, the device was tested applying an adjustable voltage between 0 and 15 V. The device emits a yellow light (578 nm). A luminance (emission intensity) of 100 cd/m^2 was achieved at 5.6 V. The maximum luminance (emission intensity) recorded was 5,300 cd/m^2.

Example 8 (Device: substance **1.2**)

[0039] Analogously to Examples 5-7 and according to the same structural principle, a 5 nm thick layer of N,N'-dimethyl-2,5-bis-(N-(2-fluorophenyl)-amino)terephthalic acid dimethyl

ester was deposited onto the hole transport layers. The arrangement (Fig. 2) was tested applying an adjustable voltage between 0 and 15 V. The device emits a green light (λ_{max} = 547 nm). A luminance (emission intensity) of 100 cd/m^2 was achieved at 5.4 V. The maximum luminance (emission intensity) achieved was 17,700 cd/m^2.

1. The substrate consists of glass;
2. The anode consists of ITO;
3. 1-Naphdata is applied as hole conductor;
4. Another hole conductor layer consists of α-NPD;
5. One or several emitter layers are arranged between the hole conductor and the electron conductor;
6. The electron conductor can e.g. consist of Alq3;
7. The buffer layer consists of LiF;
8. The cathode consists of a base metal or an alloy (e.g. aluminium or calcium).

Typically, the emitter layers are 3-10 nm thick, preferably 4-6 nm.

Table 2

Photometric parameters of selected emitter substances

	[1]V	[2]nm	Colour	[3]cd/m²	[4]cd/A	[5]lm/W
1.21	9.2	629	red-white	1980	0.12	0.07
1.16*)	9.3	634	red-white	3990	0.14	0.10
1.16	14.0	618	red	144	0.09	0.07
1.30	5.6	612	orange-red	12100	2.17	2.27
19.4	5.0	578	yellow	11400	2.04	1.72
1.5	5.6	578	yellow	5300	1.59	1.42
1.4	8.0	577	yellow	1410	0.81	0.37
19.3	6.5	565	yellow-green	4530	0.72	0.49
1.3	8.1	577	yellow-green	4330	2.77	1.52
19.7	10.2		yellow-green	474	0.26	0.10
1.34	3.5	550	green	36500	1.00	9.21
1.36	5.7	546	green	18100	6.60	4.34
1.2	5.4	547	green	17700	7.70	4.93
1.38	6.4	546	green	11300	4.62	2.47
19.2	6.6	564	green	6010	0.89	0.66
19.1	6.7	540	green	4680	3.05	1.70
19.6	8.6	545	green	2610	0.52	0.36
1.29	11.1	564	green	1330	1.59	0.47
1.1	7.1	538	green	1300	0.48	0.22
1.33	10.3	563	green	1100	1.53	0.54
1.31	10.8	566	green	754	1.60	0.53
19.8	13.4		green	273	1.20	0.70
19.11	14.4	532	green	144	0.03	0.01
19.5	>20.0	540	green	8	0.30	0.28
19.9	>15.0	544	green	64	0.58	0.13

1) voltage at 100 cd/m²
2) λ_{max} of electroluminescence
3) max. luminance (emission intensity)
4) max. photometric efficiency
5) max. performance efficiency

Table 3

Absorption and emission maxima of selected emitter substances

	λ_{max} (solid)	λ_{em} (solid)		λ_{max} (solid)	λ_{em} (solid)		λ_{max} (solid)	λ_{em} (solid)
1.6		614	**1.19**	435	531	**1.6**		623
1.7		597	**1.4**		599	**19.6**		592
1.8		604	**1.20**		596	**1.28**		588
1.10		626	**19.1**	475	564	**1.3**		595
1.11		596	**19.4**	460	598	**1.24**		612
1.12		586	**1.5**	465	582	**19.8**	453	583
1.1		547	**1.21**	495	625	**1.2**		558
1.13		559	**19.5**		612	.5	496	622
1.14		543	**1.23**		573			
1.15		605	**1.24**		564			
1.16	500	635	**1.25**		605			
1.17		596	**1.26**		602			
1.18		617	**19.3**		582			

λ_{max}: absorption maximum
λ_{em}: emission maximum
λ_{ell}: maximum of electroluminescence

Table 4

Absorbance coefficients ϵ of selected emitter substances

#	λ_{max} (nm)	ε ($l \cdot mol^{-1}$ cm^{-1})	Solvent
1.16	489	6000	$CHCl_3$
1.5	469	6640	$CHCl_3$
1.34	403	4744	NMP
19.6	452	5250	$CHCl_3$
19.5	474	4670	$CHCl_3$
19.7	433	5450	NMP
1.17	472	6410	$CHCl_3$
1.15	486	5930	$CHCl_3$
1.12	460	5930	$CHCl_3$
1.11	481	6840	$CHCl_3$
1.8	472	6450	$CHCl_3$
1.7	474	6550	$CHCl_3$
19.1	434	4700	NMP
1.30	493	5450	NMP
1.27	482	6800	$CHCl_3$

Table 5

Absorption maxima of selected emitter substances in solution

	λ_{max} (NMP)
1.6	482
1.7	476
1.8	463
1.9	652
1.10	509
1.11	475
1.12	445
1.1	413
1.13	427
1.14	428
1.15	482
1.16	494
1.17	464
1.18	464

	λ_{max} (NMP)
1.19	417
1.4	468
1.20	461
19.1	435
19.4	458
1.5	451
1.21	479
1.22	505
19.5	472
1.23	432
1.24	446
1.25	487
1.26	482
19.3	447

	λ_{max} (NMP)
1.6	481
19.6	452
1.28	473
1.3	451
1.24	480
1.30	493
1.34	403
.5	461
1.43	496

Table 6

DSC values of selected emitter substances

#	DSC peak in °C
19.3	260,0
1.6	269,1
1.7	171,3
1.8	227,8
1.11	192,1
1.12	172,2
1.15	232,0
1.17	166,5
19.1	325,7
1.16	183,3
1.34	254,7
19.1	325,7
1.27	182,5

[0040] Preparation and measuring conditions

a) Substrate: 125 nm ITO, approx. 13 Ω/sq and 85% tranmission, 50 x 50 mm^2 glass substrate (1.1 mm thick polished soda-lime float glass with SiO_2 layer and 8 individual ITO anodes (active surface area: 2 x 2 mm^2))

Purified 2 x 20 min in an ultrasonic bath with Aceton selectopur and Methanol selectopur,

3 x snow jet cleaning (CO_2 ice crystals)

O_2 plasma treatment (5 min at 450 W and 0.12 mbar)

b) Pressure (2-4) x 10^{-5} mbar during deposition

Aluminium oxide ceramic crucible

Deposition rate: 0.06 nm/s

Layer thickness checked using a piezoelectric microbalance measuring device

Change of mask and intermediate aeration of the deposition chamber, first with nitrogen and then with air

Cathodes, 0.5 nm lithium fluoride (insulating) and 100 nm aluminium each

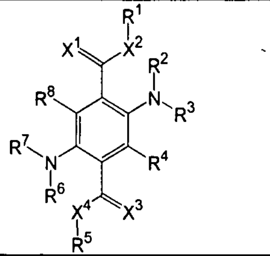
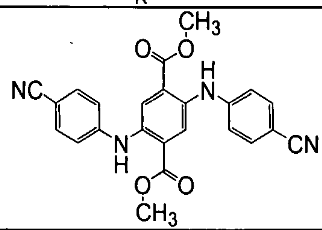
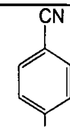
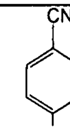
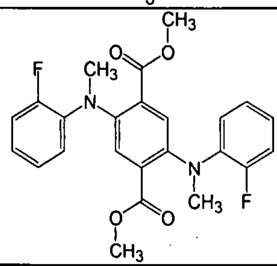
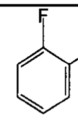
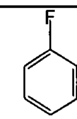
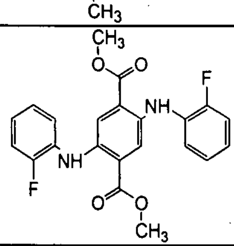
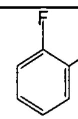
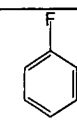
c) The device according to Fig. 2 was introduced in a glove box, the active OLED surface was positioned above calibrated V_λ silicon photodiodes in a darkened measuring device, and the anode (ITO-) and cathode (Al-) contacts were brought in contact with gilded spring electrodes.

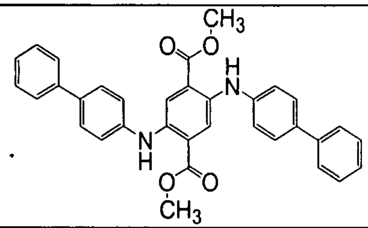
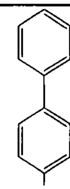
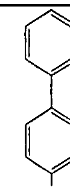
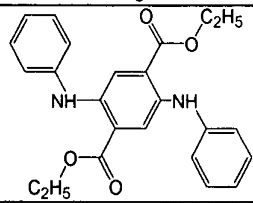
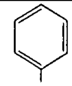
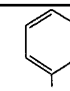
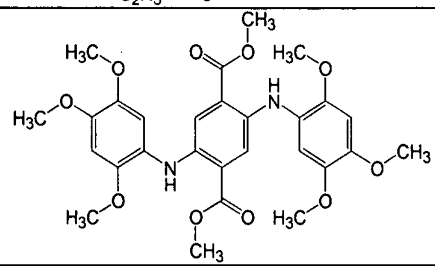
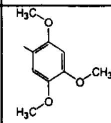
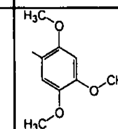
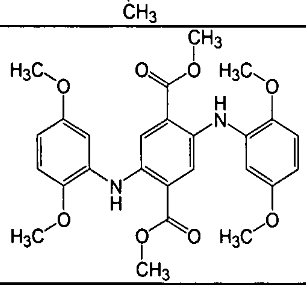
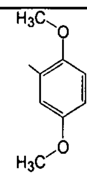
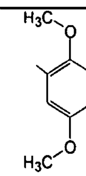
Programmable voltage supply (SMU) and digital multimeter for recording and processing the OLED curve in a PC via GPIB-BUS and LabView program

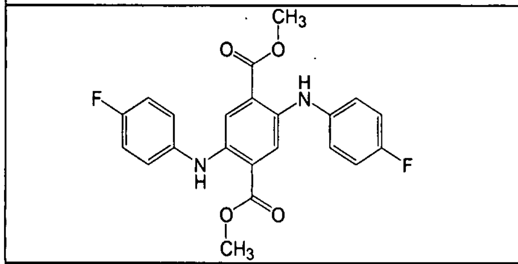
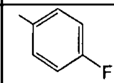
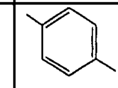
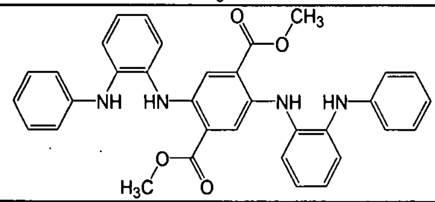
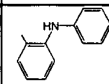
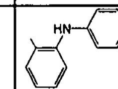
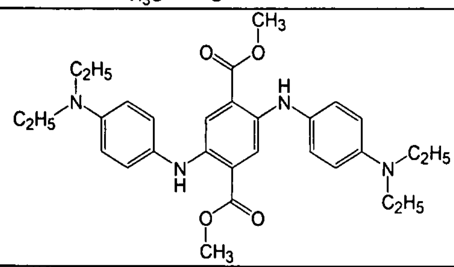
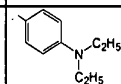
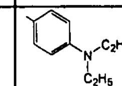
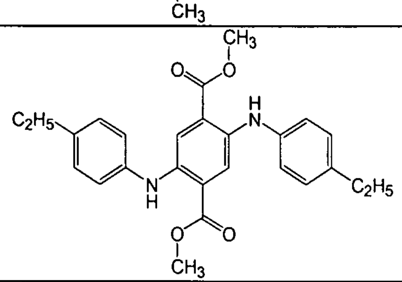
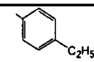
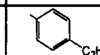
Voltage pulse operation (pulses lasting 1s) between -10 V and +15 V (0.5 V increments): current density-voltage curve and luminance (emission intensity)-voltage curve as well as the calculated photometric efficiency values (in cd/A) and performance efficiency values (in lm/W) as a function of U

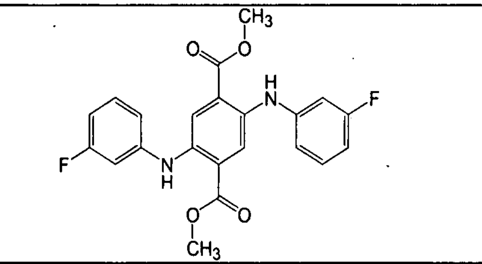
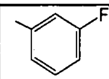
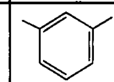
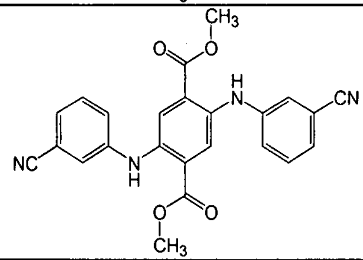
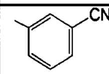
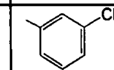
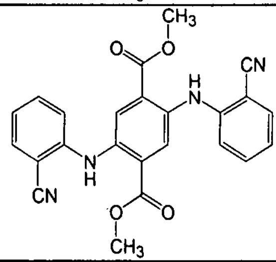
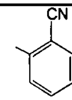
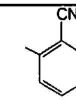
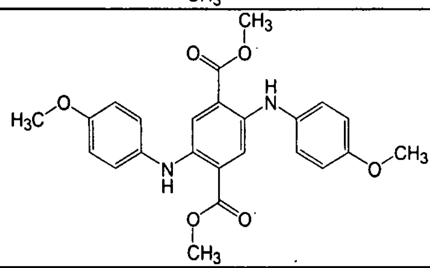
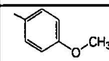
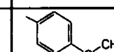
d) Wavelength of maximum by recording the electroluminescence spectrum using an Xdap diode array spectrometer

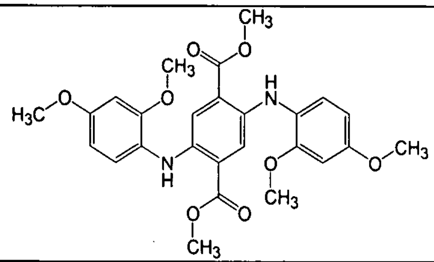
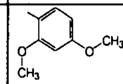
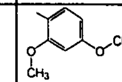
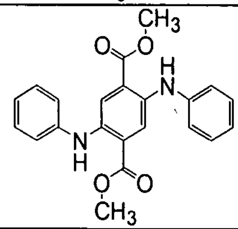
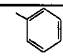
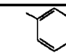
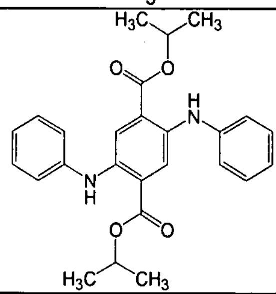
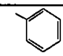
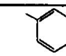
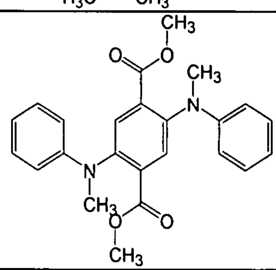
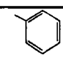
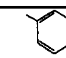
Table 1: 2,5-diaminoterephthalic acid derivatives

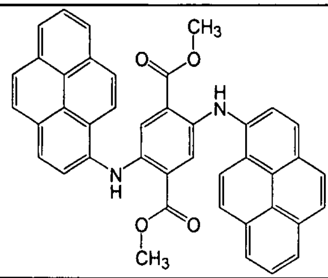
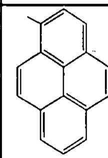
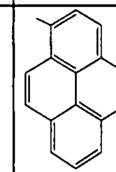
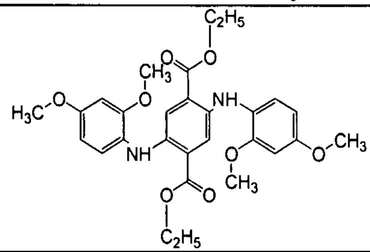
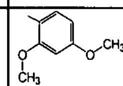
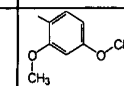
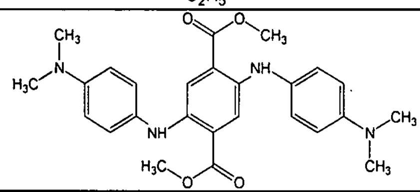
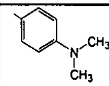
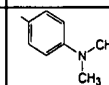
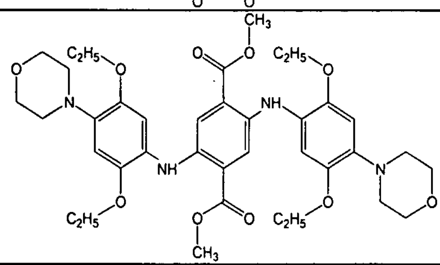
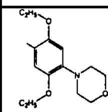
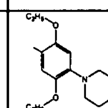
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 1.0												
 1.1	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.2	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 1.3	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

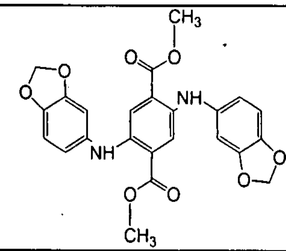
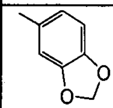
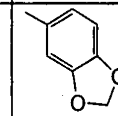
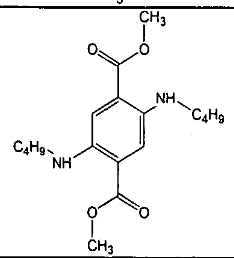
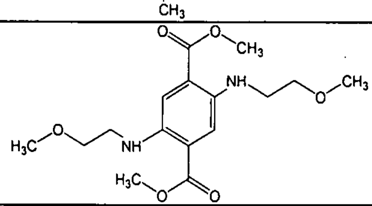
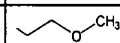
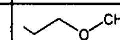
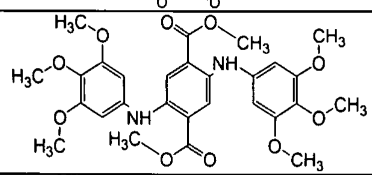
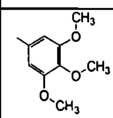
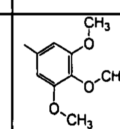
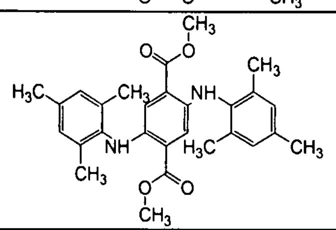
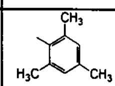
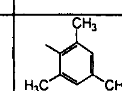
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 1.4	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.5	O	O		$-C_2H_5$	H	H	O	O	H	$-C_2H_5$	H	
 1.6	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.7	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.8**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.9**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.10**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.11**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.12**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.13**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.14**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.15**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.16**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.17**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.18**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.19**	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.20**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.21**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.22**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.23**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 1.24	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.25	O	O	$-C_4H_9$	$-CH_3$	H	H	O	O	H	$-CH_3$	H	$-C_4H_9$
 1.26	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.27	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.28	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	

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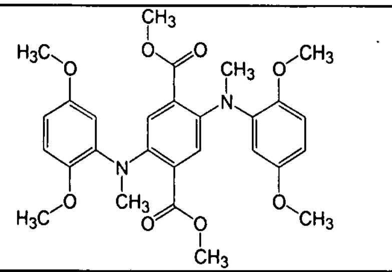
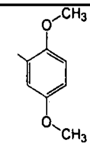
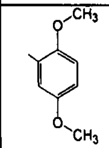
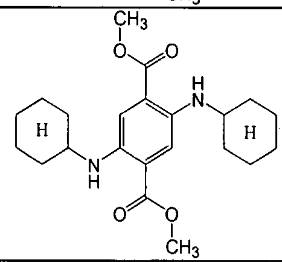
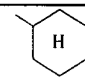
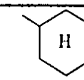
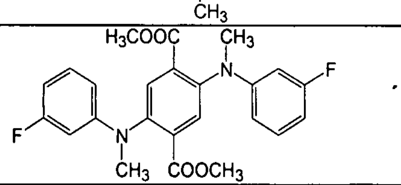
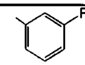
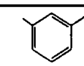
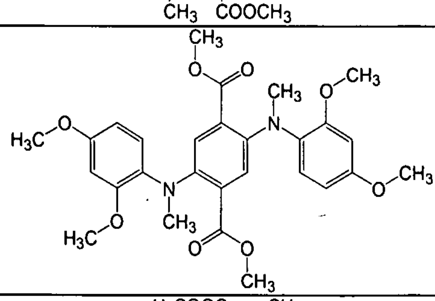
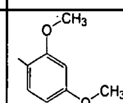
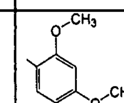
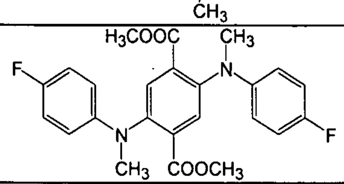
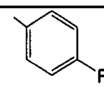
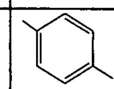
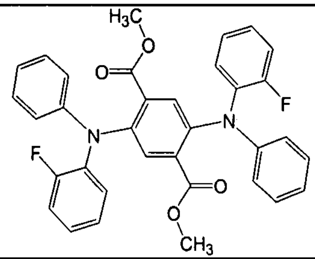
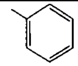
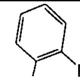
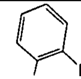
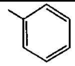
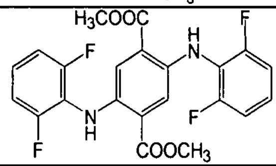
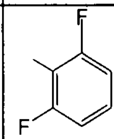
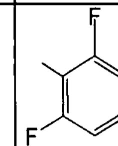
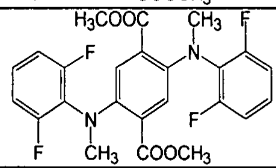
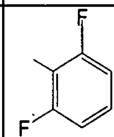
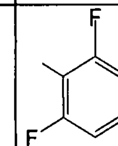
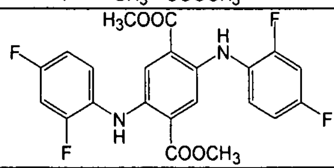
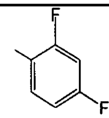
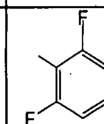
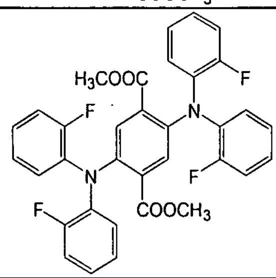
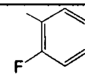
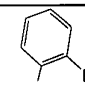
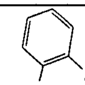
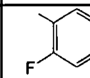
Substance	X¹	X²	R³	R¹	R²	R⁴	X⁴	X³	R⁸	R⁵	R⁶	R⁷
 1.29	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 1.30	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 1.31	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 1.32	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 1.33	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.34**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
 **1.35**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.36**	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 **1.37**	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
 **1.38**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		

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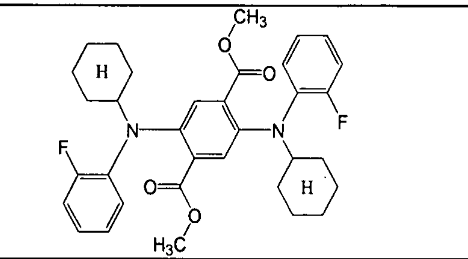
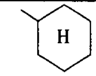
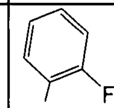
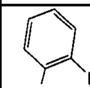
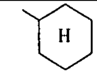
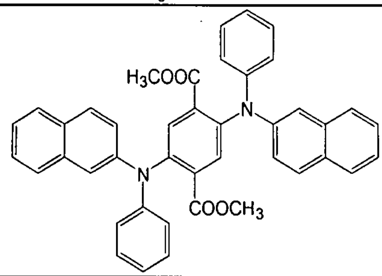
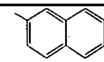
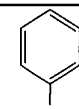
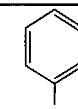
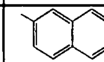
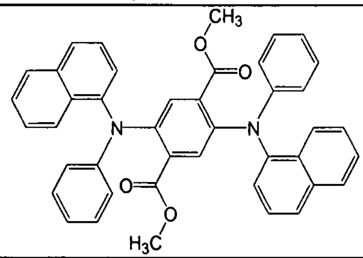
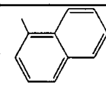
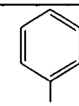
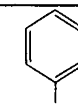
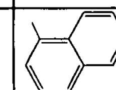
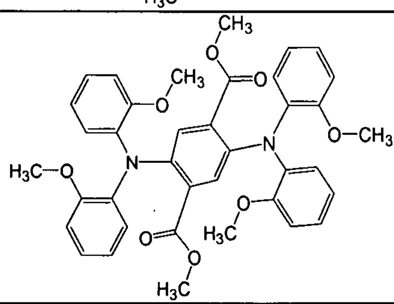
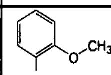
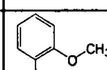
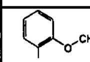
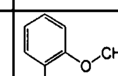
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 **1.39**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
 **1.40**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
 **1.41**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
 **1.42**	O	O		$-CH_3$		H	O	O	H	$-CH_3$		

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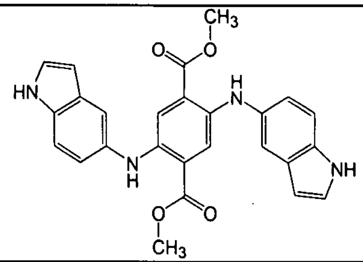
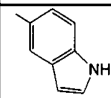
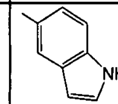
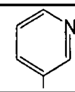
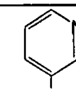
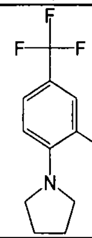
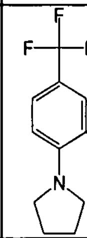
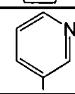
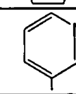
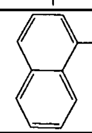
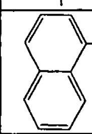
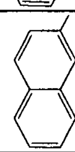
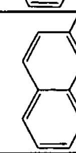
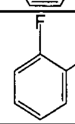
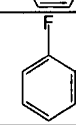
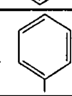
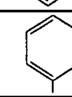
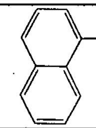
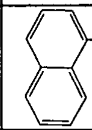
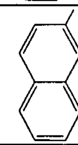
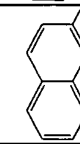
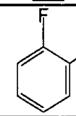
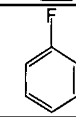
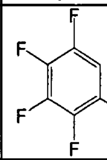
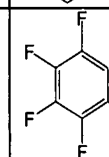
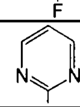
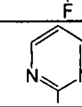
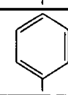
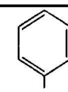
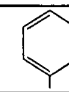
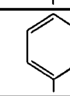
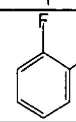
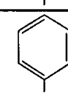
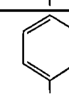
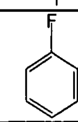
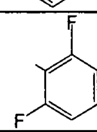
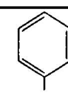
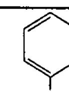
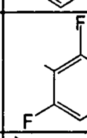
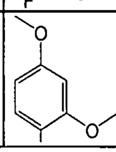
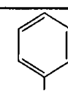
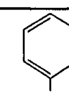
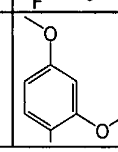
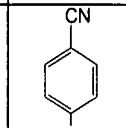
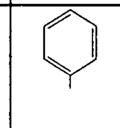
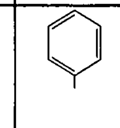
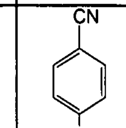
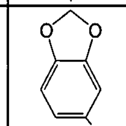
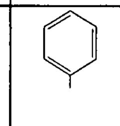
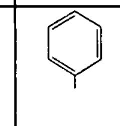
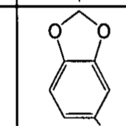
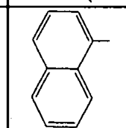
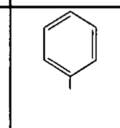
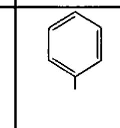
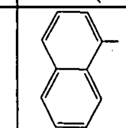
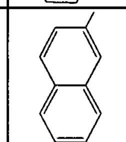
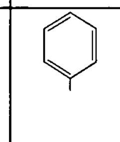
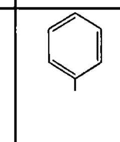
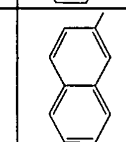
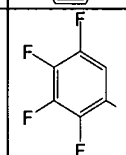
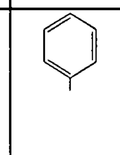
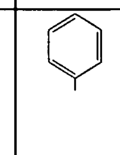
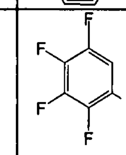
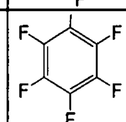
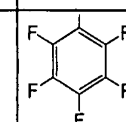
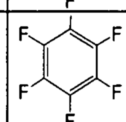
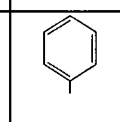
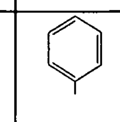
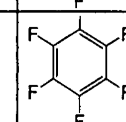
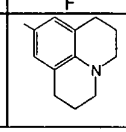
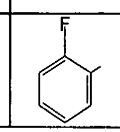
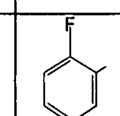
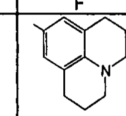
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 1.43	O	O		$-CH_3$	H	H	O	O	H	$-CH_3$	H	
1.44	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.45	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.46	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.47	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.48	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.49	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.50	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
1.51	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	
1.52	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	
1.53	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	
1.54	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	
1.55	O	O		$-CH_3$	$-CF_3$	H	O	O	H	$-CH_3$	$-CF_3$	
1.56	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.57	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.58	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.59	O	O		$-CH_3$		H	O	O	H	$-CH_3$		

Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
1.60	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.61	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.62	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.63	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.64	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.65	O	O		$-CH_3$	$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
1.67	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.68	O	O		$-CH_3$		H	O	O	H	$-CH_3$		

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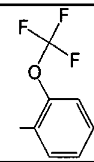
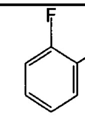
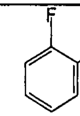
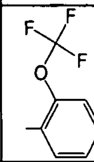
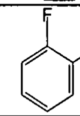
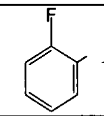
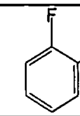
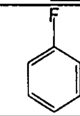
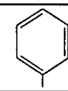
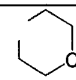
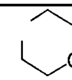
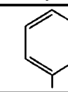
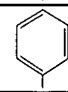
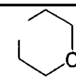
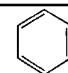
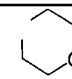
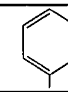
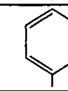
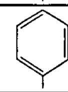
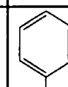
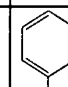
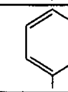
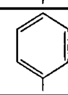
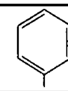
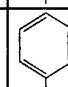
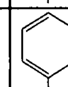
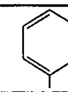
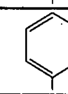
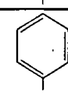
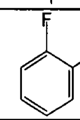
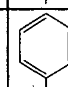
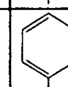
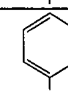
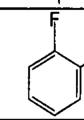
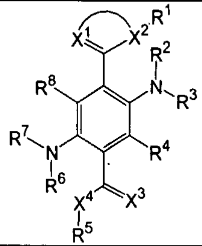
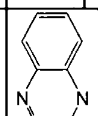
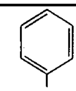
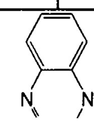
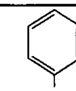
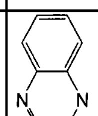
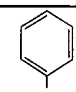
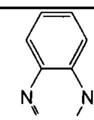
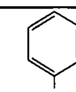
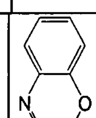
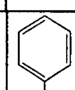
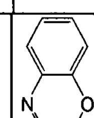
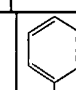
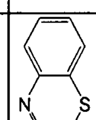
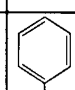
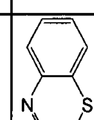
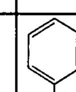
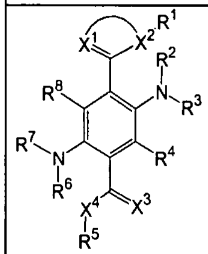
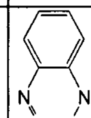
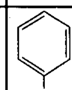
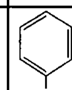
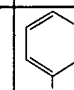
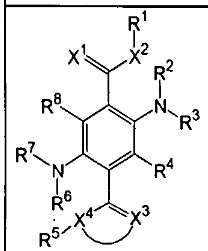
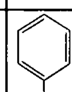
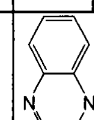
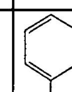
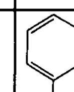
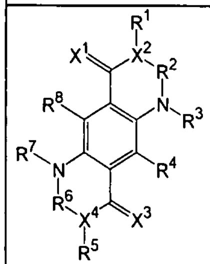
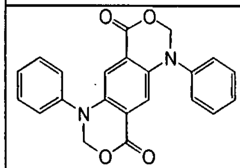
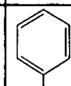
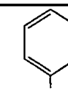
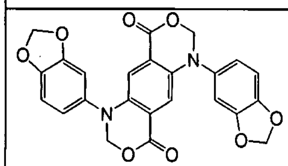
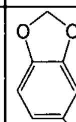
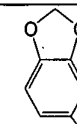
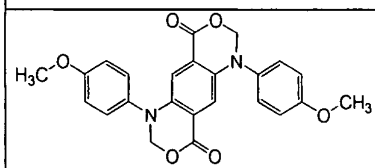
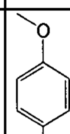
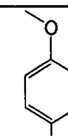
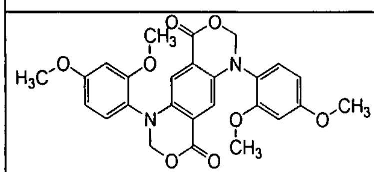
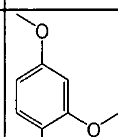
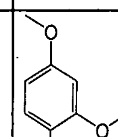
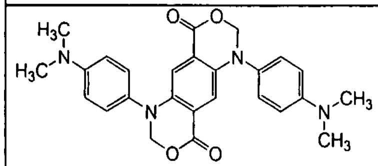
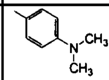
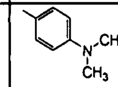
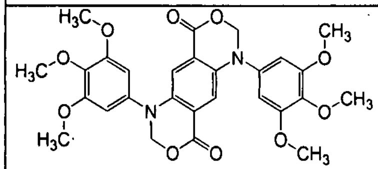
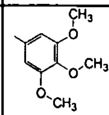
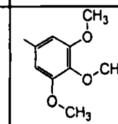
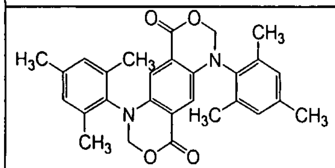
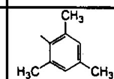
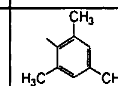
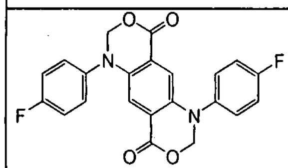
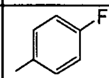
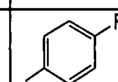
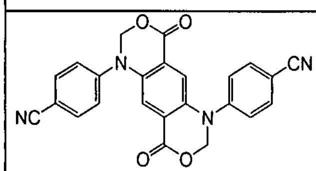
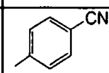
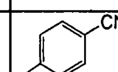
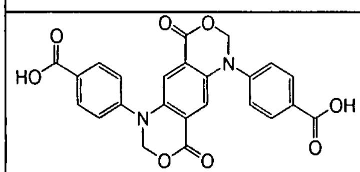
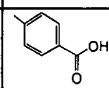
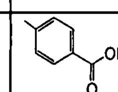
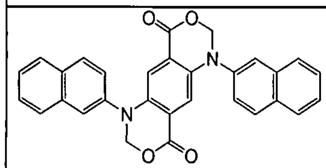
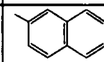
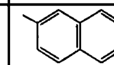
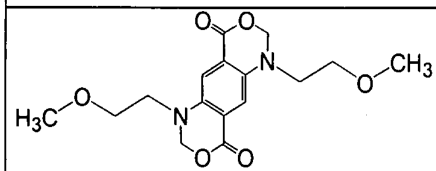
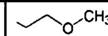
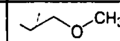
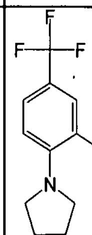
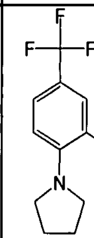
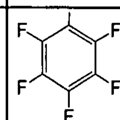
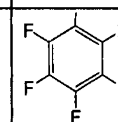
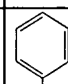
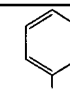
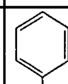
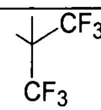
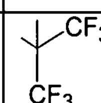
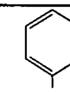
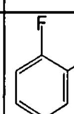
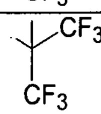
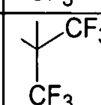
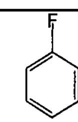
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
1.69	O	O		$-CH_3$		H	O	O	H	$-CH_3$		
1.70				$-CH_3$		H	O	O	H	$-CH_3$		
1.71	O	N			H	H	N	O	H		H	
1.72	O	N				H	N	O	H			
1.73	O	O		$-CH_3$	$-CH_3$		O	O		$-CH_3$	$-CH_3$	
1.74	O	O		$-CH_3$			O	O		$-CH_3$		
1.75	O	O		$-CH_3$			O	O		$-CH_3$		

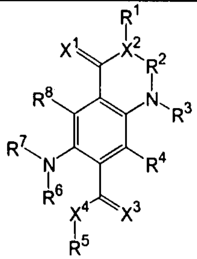
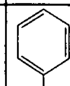
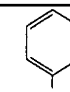
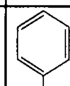
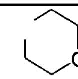
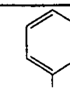
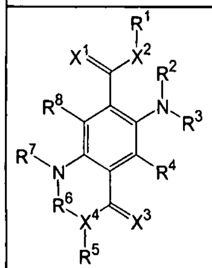
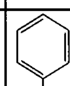
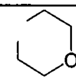
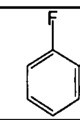
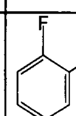
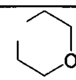
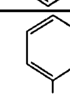
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 17.0												
				$-CH_3$	$-CH_3$	H			H	$-CH_3$	$-CH_3$	
				$-CH_3$	$-CH_3$	H			H	$-CH_3$	$-CH_3$	
17.3				-	$-CH_3$	H			H	-	$-CH_3$	
17.4				-	$-CH_3$	H			H	-	$-CH_3$	

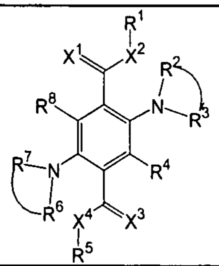
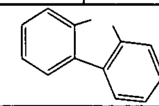
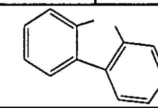
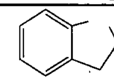
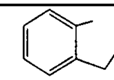
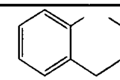
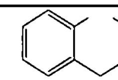
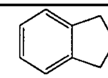
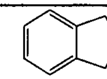
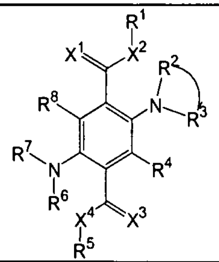
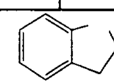
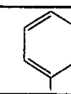
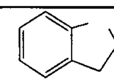
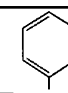
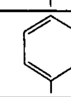
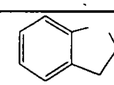
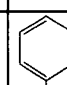
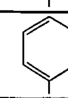
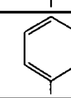
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7
 5.0												
5.1					$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$	
 11.0												
11.1	O	O		$-CH_3$	$-CH_3$	H				$-CH_3$	$-CH_3$	

Substance	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7
 19.0												
 19.1	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.2	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.3	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.4	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	

Substance	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7
 19.5	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.6	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.7	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.8	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.9	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.10	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	

Substance	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7
 19.11	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
 19.12	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
19.13	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
19.14	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-	
19.15	O	O		$-CF_2-$	-	H	O	O	H	$-CF_2-$	-	
19.16	O	O			-	H	O	O	H		-	
19.17	O	O			-	H	O	O	H		-	

Substance	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7
 **7.0**												
7.1	O	O		-CH_2-		H	O	O	H	-CH_3	-CH_3	
7.2	O	O		-CH_2-		H	N	O	H		-CH_3	
 **13.0**												
13.1	O	O			-CH_3	H	N	O	H	-CH_2-		
13.2	O	O			-CH_3	H	N	O	H	-CH_2-		

Substance	X^1	R^1	X^2	R^2	R^3	R^4	R^5	X^3	X^4	R^6	R^7	R^8
 **20,0**												
20.1	O	-CH_3	O			H	-CH_3	O	O			H
20.2	O	-CH_3	O			H	-CH_3	O	O			H
20.3	O	-CH_3	O			H	-CH_3	O	O			H
20.4	O	-CH_3	O			H	-CH_3	O	O			H
 **8.0**												
8.1	O	-CH_3	O			H	-CH_3	O	O	-CH_3		H
8.2	O	-CH_3	O			H	-CH_3	O	O			H
8.3	O	-CH_3	O				-CH_3	O	O			H

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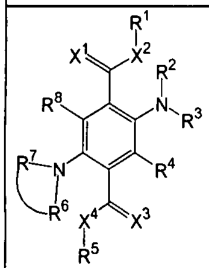
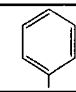
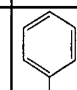
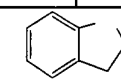
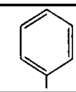
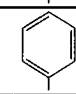
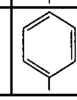
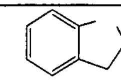
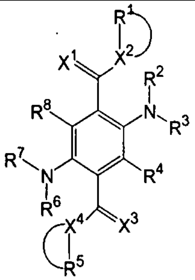
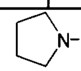
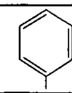
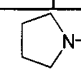
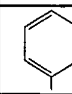
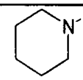
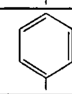
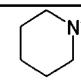
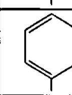
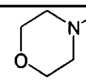
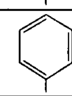
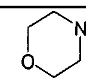
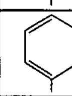
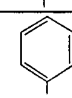
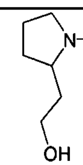
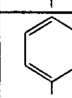
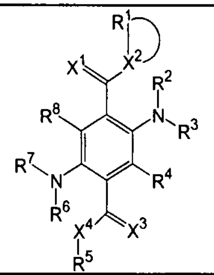
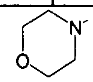
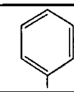
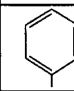
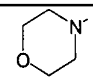
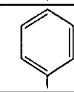
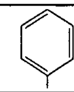
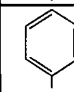
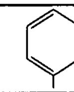
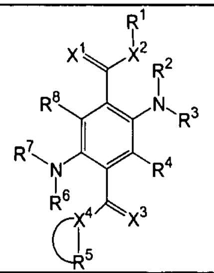
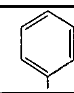
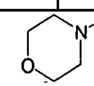
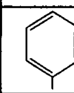
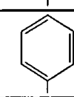
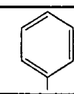
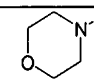
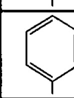
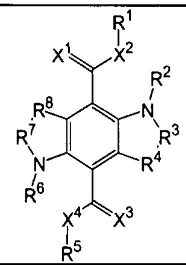
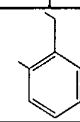
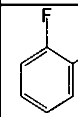
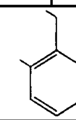
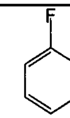
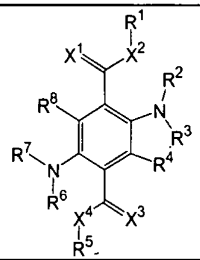
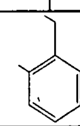
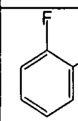
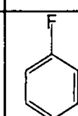
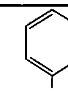
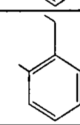
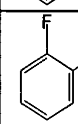
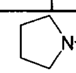
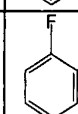
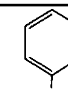
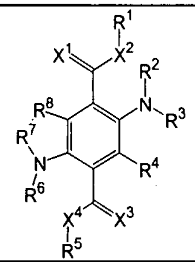
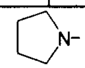
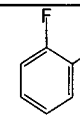
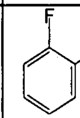
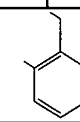
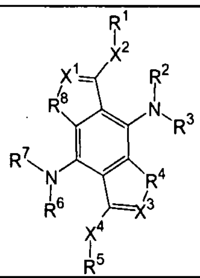
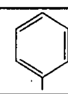
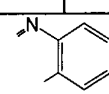
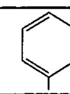
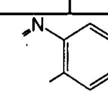
Substance	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7
 14.0												
14.1	O	-CH_3	O	-CH_3			-CH_3	O	O			H
14.2	O	-CH_3	O				-CH_3	O	O			H

Substance	R¹	X²	X¹	R⁴	R³	R²	R⁵	X⁴	X³	R⁸	R⁷	R⁶
 18.0												
18.1			O	H		$-CH_3$			O	H		$-CH_3$
18.2			O	H		$-CH_3$			O	H		$-CH_3$
18.3			O	H		$-CH_3$			O	H		$-CH_3$
18.4			O	H		$-CH_3$			O	H		$-CH_3$

Substance	R1	X2	X1	R4	R3	R2	R5	X4	X3	R8	R7	R6
 **6.0**												
6.1			O	H		$-CH_3$	$-CH_3$	O	O	H		$-CH_3$
6.2			O	H			$-CH_3$	O	O	H		
 **12.0**												
12.1	$-CH_3$	O	O	H		$-CH_3$			O	H		H
12.2	$-CH_3$	O	O	H					O	H		$-CH_3$

Substance	R1	X2	X1	R4	R3	R2	R5	X4	X3	R8	R7	R6
 **21.0**												
21.1	$-CH_3$	O	O				$-CH_3$	O	O			
 **9.0**												
9.1	$-CH_3$	O	O				$-CH_3$	O	O	H		
9.2	$-CH_3$	O	O						O	H		

Substance	R^1	X^2	X^1	R^4	R^3	R^2	R^5	X^4	X^3	R^8	R^7	R^6
 **15.0**												
15.1			O	H			$-CH_3$	O	O			

Substance	X^2	R^2	R^3	R^4	X^3	R^5	R^6	X^4	R^7	R^8	X^1	R^1
 **22.0**												
22.1	O	$-CH_3$				$-CH_3$	$-CH_3$	O				$-CH_3$

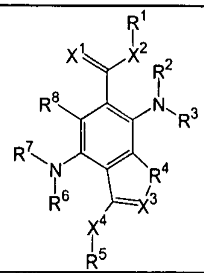
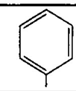
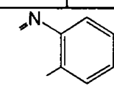
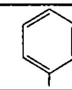
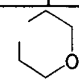
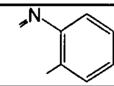
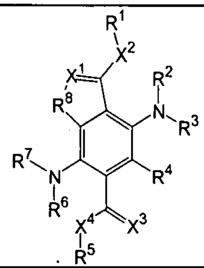
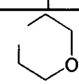
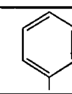
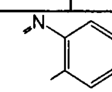
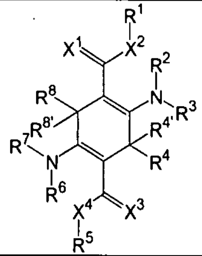
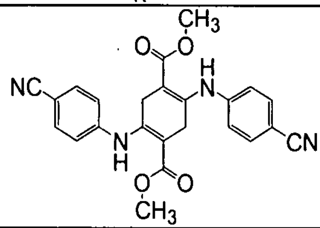
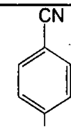
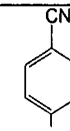
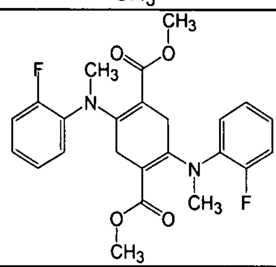
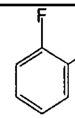
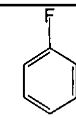
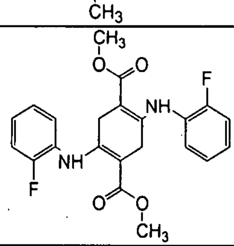
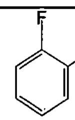
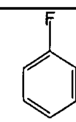
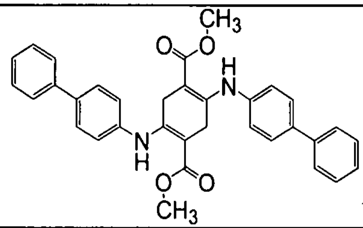
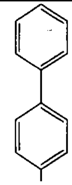
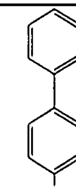
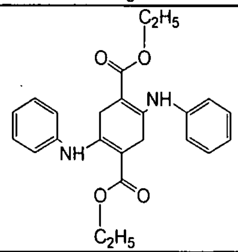
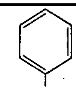
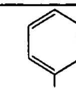
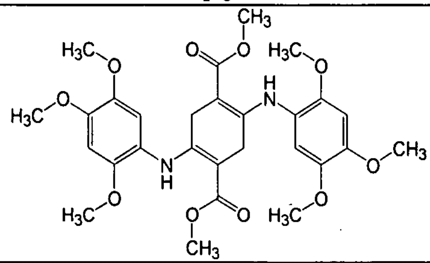
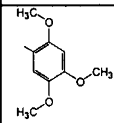
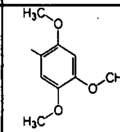
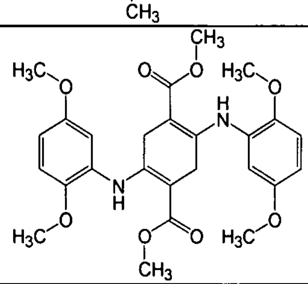
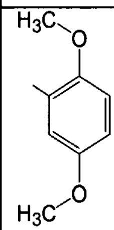
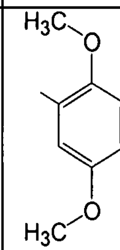
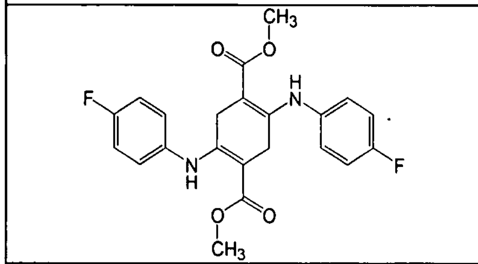
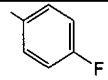
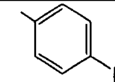
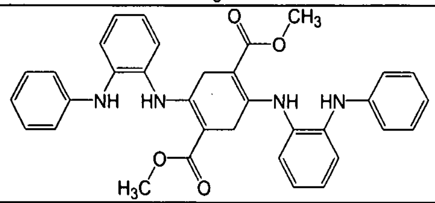
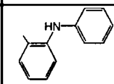
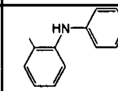
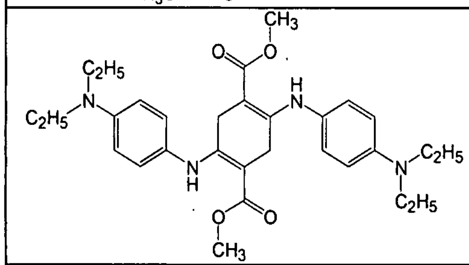
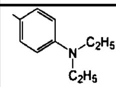
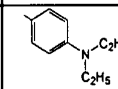
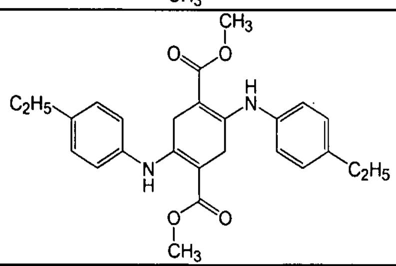
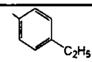
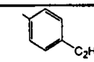
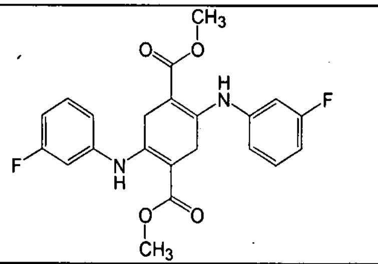
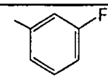
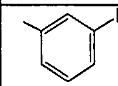
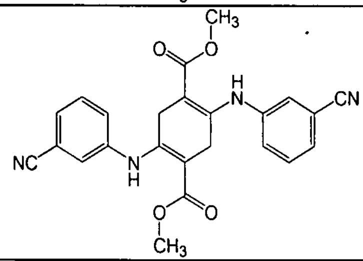
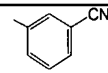
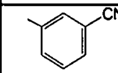
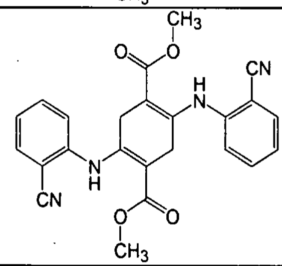
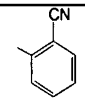
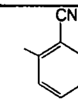
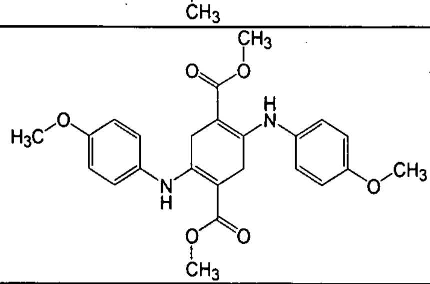
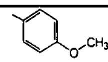
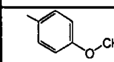
Substance	X^2	R^2	R^3	R^4	X^3	R^5	R^6	X^4	R^7	R^8	X^1	R^1
 **10.0**												
10.1	O	$-CH_3$				$-CH_3$	$-CH_3$	O		H	O	$-CH_3$
10.2	O					$-CH_3$	$-CH_3$	O		H	O	$-CH_3$
 **16.0**												
16.1	O			H	O	$-CH_3$	$-CH_3$	O				$-CH_3$

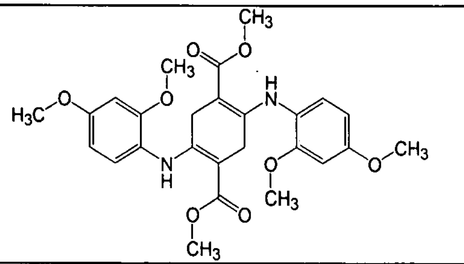
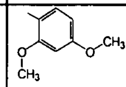
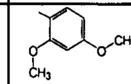
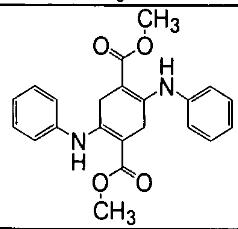
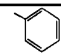
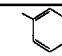
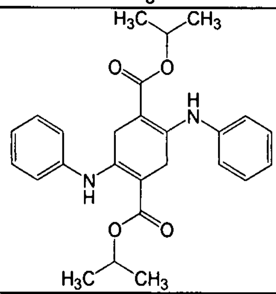
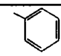
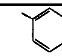
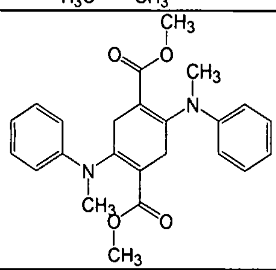
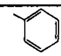
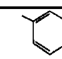
Table 2: 2,5-diamino-3,6-dihydroterephthalic acid derivatives

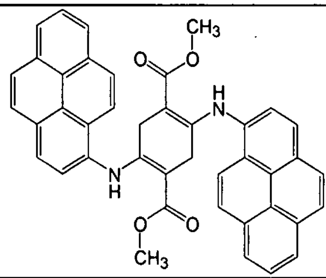
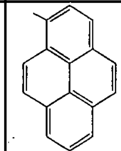
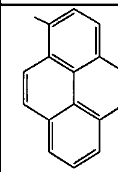
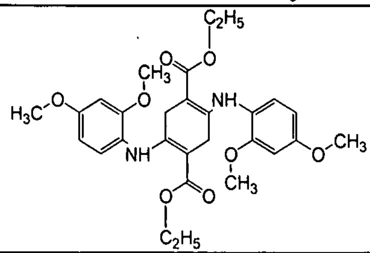
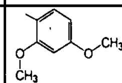
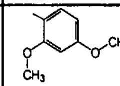
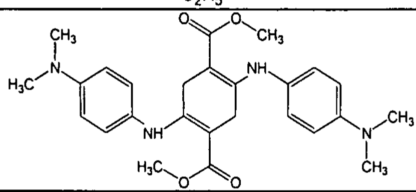
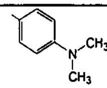
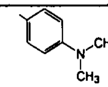
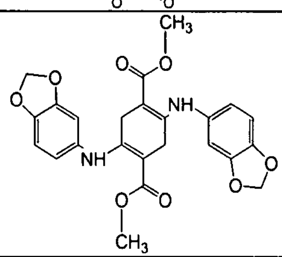
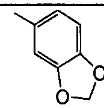
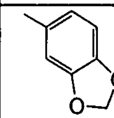
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.0**														
 **2.1**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.2**	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
 **2.3**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	

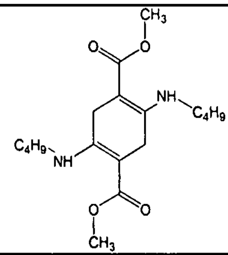
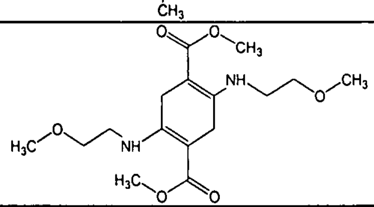
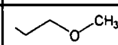
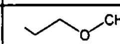
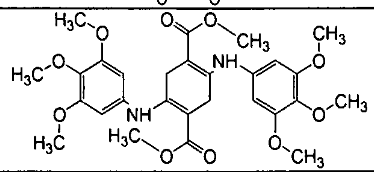
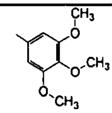
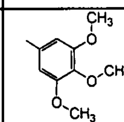
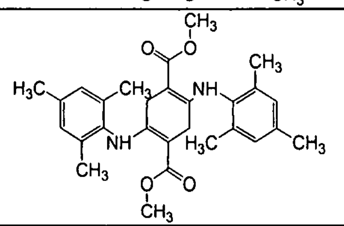
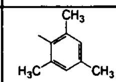
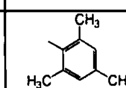
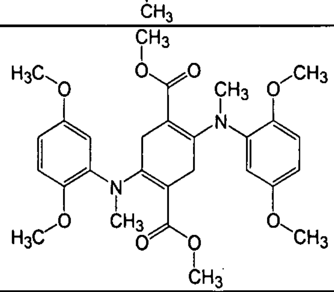
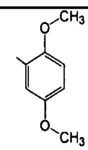
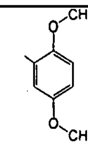
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.4**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.5**	O	O		- C_2H_5	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.6**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.7**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	

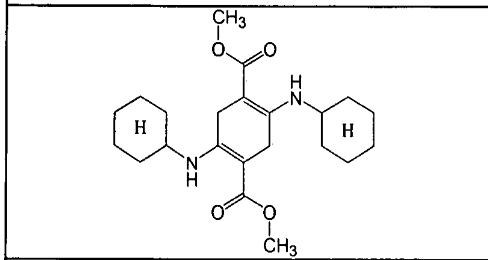
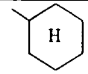
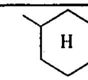
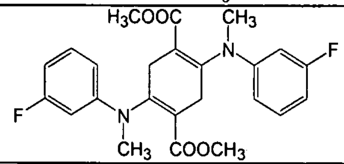
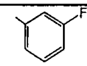
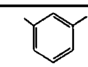
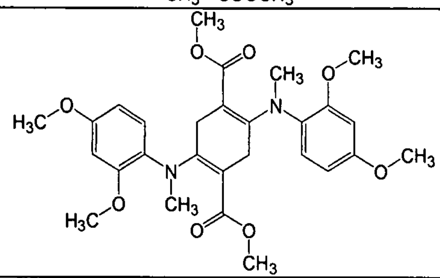
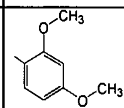
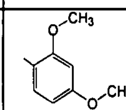
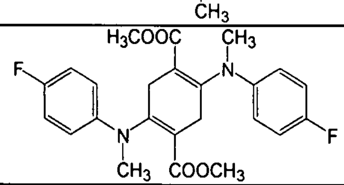
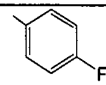
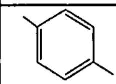
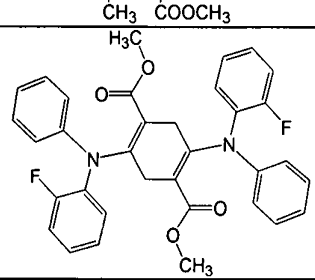
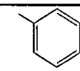
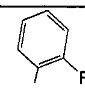
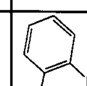
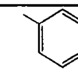
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.8**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.9**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.10**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.11**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.12**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.13**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.14**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.15**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.16**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.17**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.18**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.19**	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	

Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.20**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.21**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.22**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.24**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	

Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 2.25	O	O	$-C_4H_9$	$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	$-C_4H_9$
 2.26	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 2.27	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 2.28	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 2.29	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	

Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 **2.30**	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 **2.31**	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
 **2.32**	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
 **2.33**	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
 **2.34**	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		

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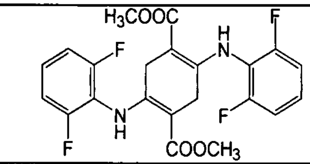
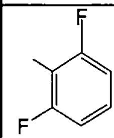
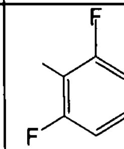
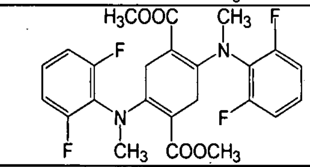
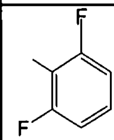
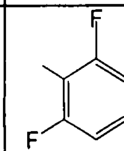
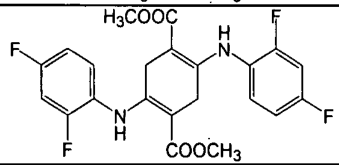
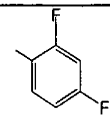
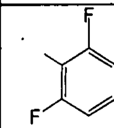
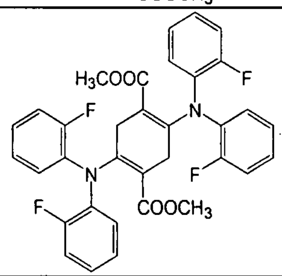
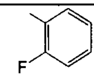
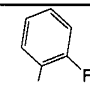
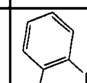
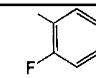
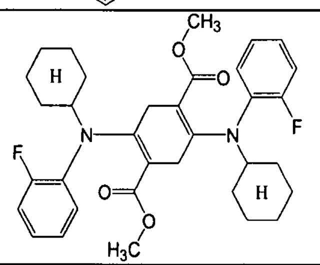
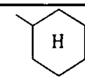
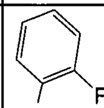
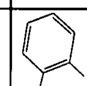
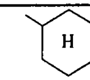
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 2.35	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 2.36	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
 2.37	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
 2.38	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
 2.39	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		

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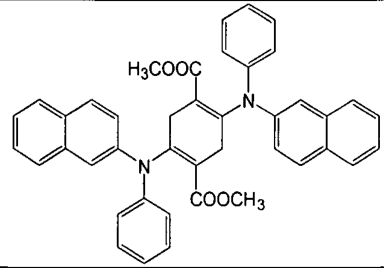
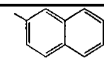
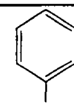
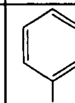
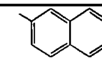
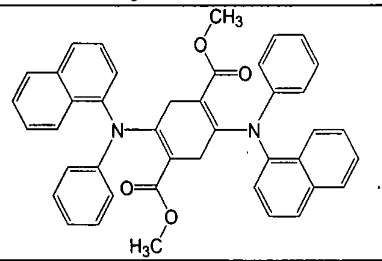
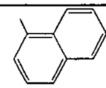
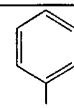
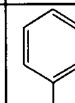
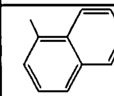
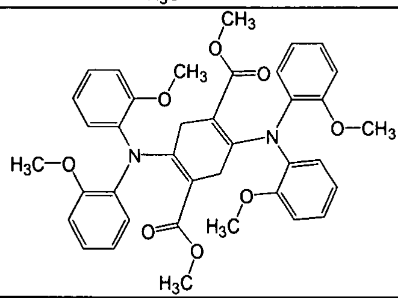
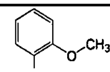
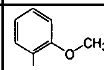
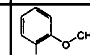
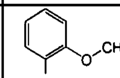
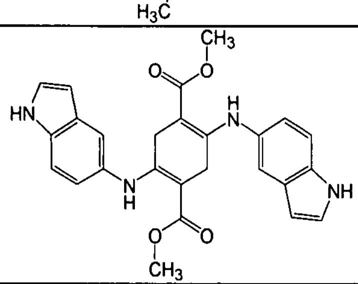
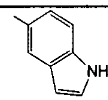
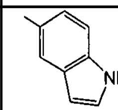
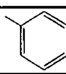
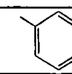
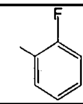
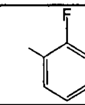
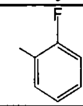
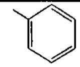
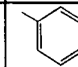
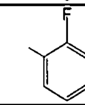
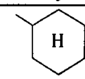
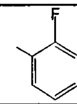
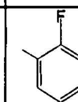
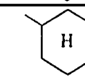
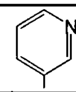
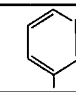
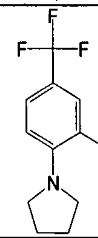
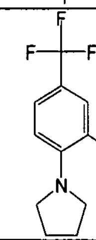
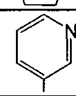
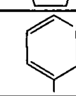
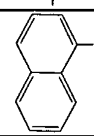
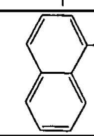
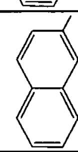
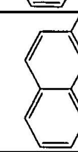
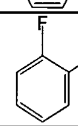
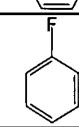
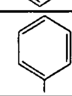
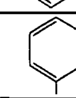
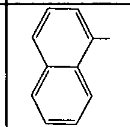
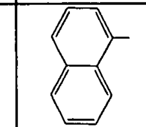
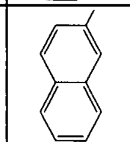
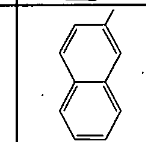
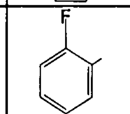
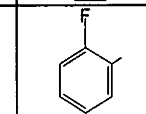
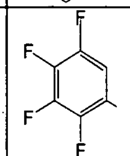
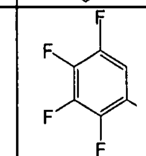
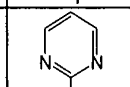
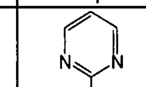
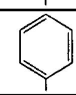
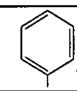
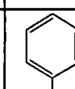
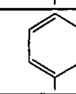
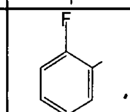
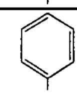
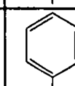
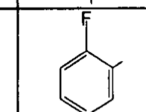
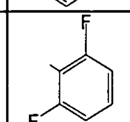
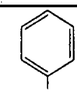
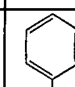
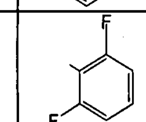
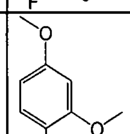
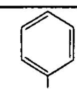
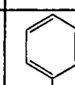
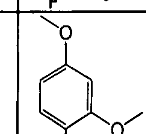
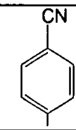
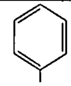
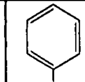
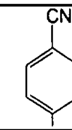
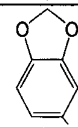
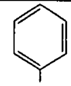
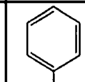
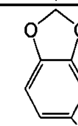
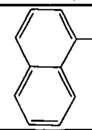
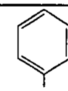
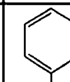
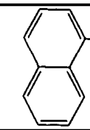
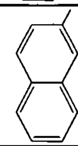
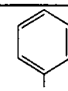
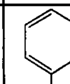
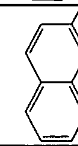
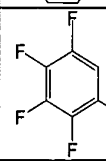
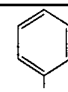
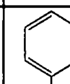
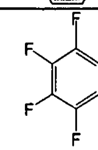
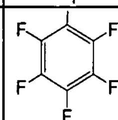
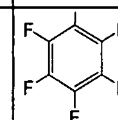
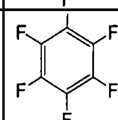
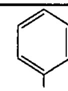
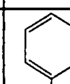
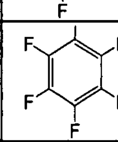
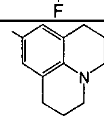
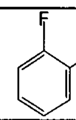
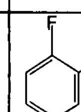
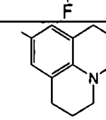
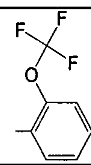
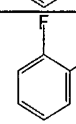
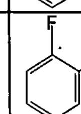
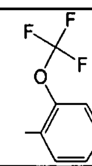
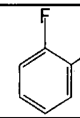
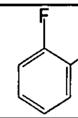
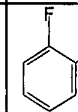
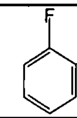
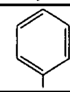
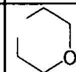
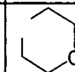
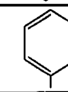
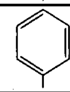
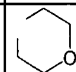
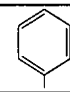
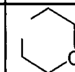
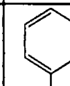
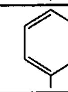
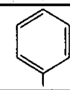
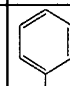
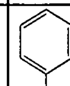
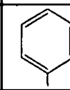
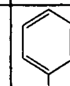
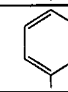
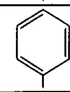
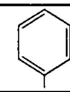
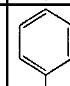
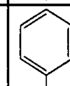
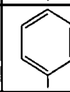
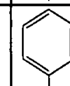
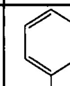
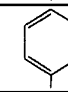
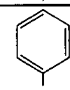
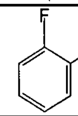
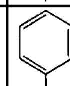
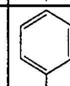
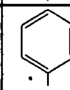
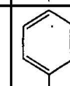
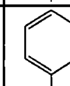
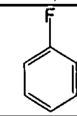
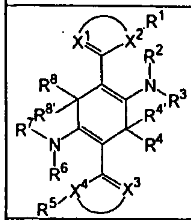
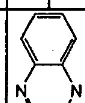
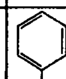
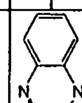
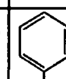
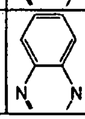
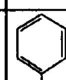
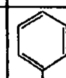
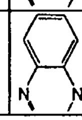
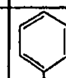
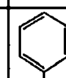
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
 2.40	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
 2.41	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
 2.42	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
 2.43	O	O		$-CH_3$	H	H	H	O	O	H	H	$-CH_3$	H	
2.44	O	O		$-CH_3$	$-CH_3$	F	F	O	O	F	F	$-CH_3$	$-CH_3$	

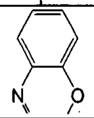
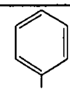
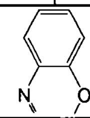
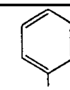
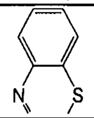
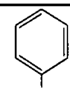
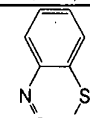
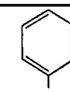
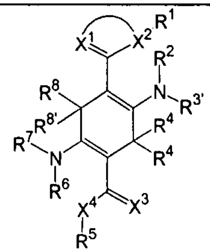
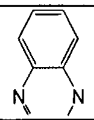
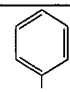
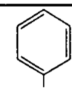
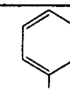
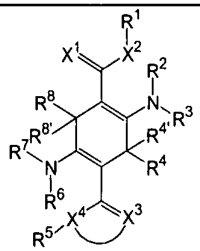
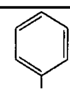
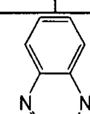
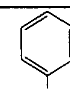
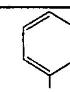
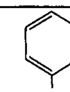
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
2.45	O	O		$-CH_3$	$-CH_3$	F	F	O	O	F	F	$-CH_3$	$-CH_3$	
2.46	O	O		$-CH_3$		F	F	O	O	F	F	$-CH_3$		
2.47	O	O		$-CH_3$		F	F	O	O	F	F	$-CH_3$		
2.48	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.49	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.50	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.51	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.52	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.53	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.54	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	

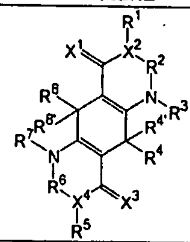
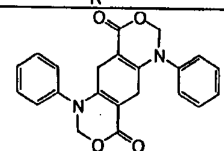
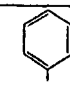
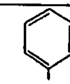
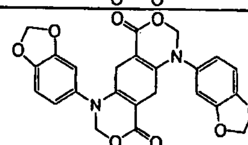
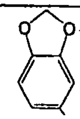
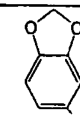
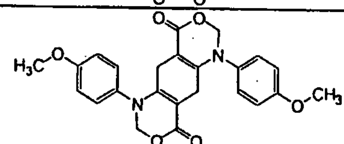
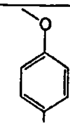
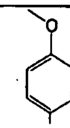
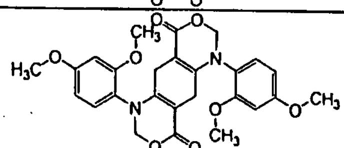
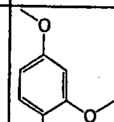
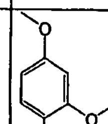
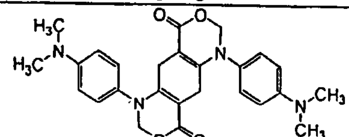
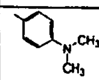
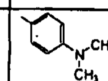
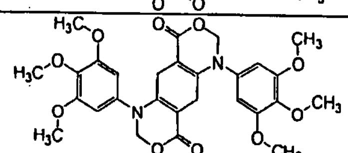
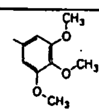
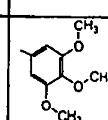
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
2.55	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	
2.56	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	
2.57	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	
2.58	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	
2.59	O	O		$-CH_3$	$-CF_3$	H	H	O	O	H	H	$-CH_3$	$-CF_3$	
2.60	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.61	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.62	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.63	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		

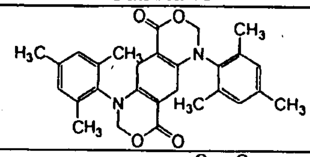
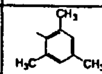
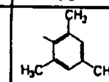
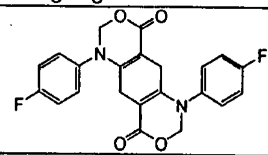
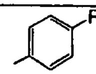
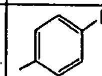
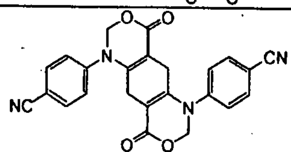
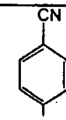
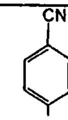
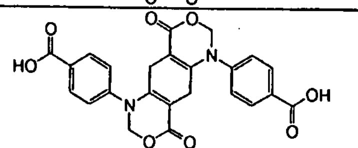
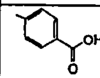
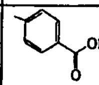
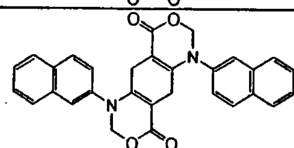
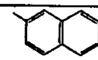
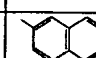
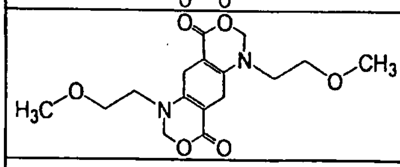
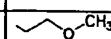
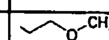
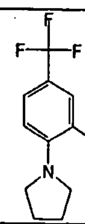
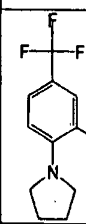
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
2.64	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.65	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.66	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.67	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.68	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.69	O	O		$-CH_3$	$-CH_3$	H	H	O	O	H	H	$-CH_3$	$-CH_3$	
2.70	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.71	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.72	O	O		$-CH_3$		H	H	O	O	H	H	$-CH_3$		

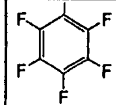
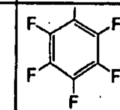
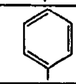
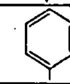
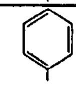
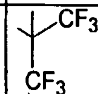
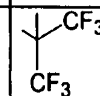
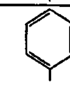
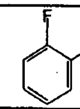
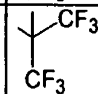
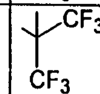
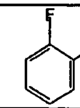
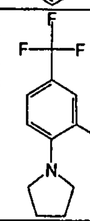
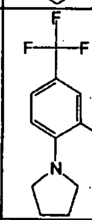
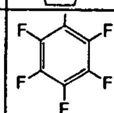
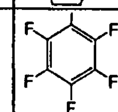
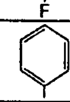
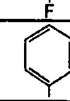
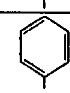
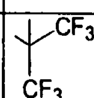
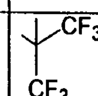
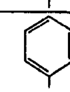
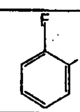
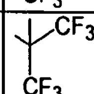
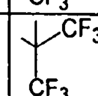
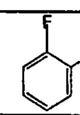
Substance	X^1	X^2	R^3	R^1	R^2	$R^{4'}$	$R^{4'}$	X^4	X^3	R^8	$R^{8'}$	R^5	R^6	R^7
2.73				$-CH_3$		H	H	O	O	H	H	$-CH_3$		
2.74	O	N			H	H	H	N	O	H	H		H	
2.75	O	N				H	H	N	O	H	H			
2.76	O	O		$-CH_3$	$-CH_3$			O	O			$-CH_3$	$-CH_3$	
2.78	O	O		$-CH_3$				O	O			$-CH_3$		
2.79	O	O		$-CH_3$				O	O			$-CH_3$		

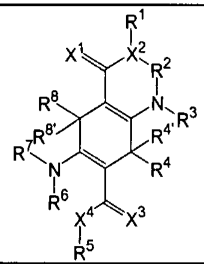
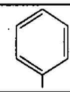
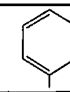
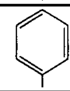
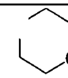
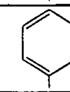
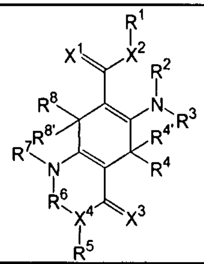
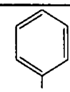
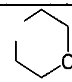
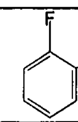
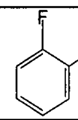
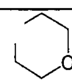
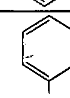
Substanz	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7	$R^{4'}$	$R^{8'}$
 37.0														
37.1				$-CH_3$	$-CH_3$	H			H	$-CH_3$	$-CH_3$		H	H
37.2					$-CH_3$	H			H		$-CH_3$		H	H

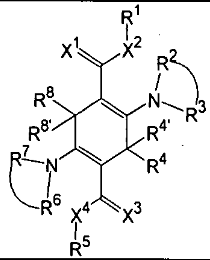
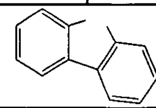
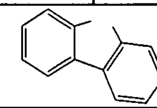
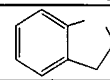
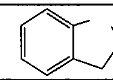
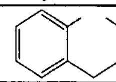
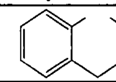
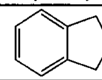
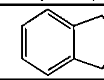
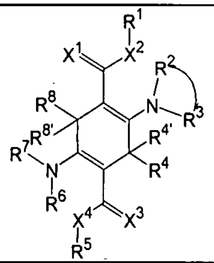
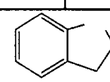
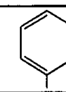
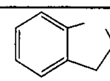
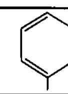
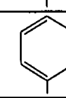
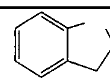
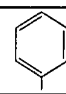
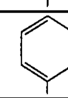
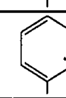
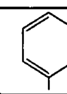
Substance	X^1	X^2	R^3	R^1	R^2	R^4	X^4	X^3	R^8	R^5	R^6	R^7	$R^{4'}$	$R^{8'}$
37.3				-	$-CH_3$	H			H	-	$-CH_3$		H	H
37.4				-	$-CH_3$	H			H	-	$-CH_3$		H	H
 23.0														
23.1					$-CH_3$	H	O	O	H	$-CH_3$	$-CH_3$		H	H
 30.0														
30.1	O	O		$-CH_3$	$-CH_3$	H				$-CH_3$	$-CH_3$		H	

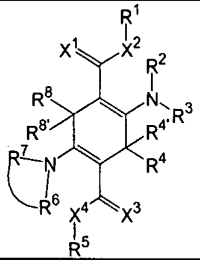
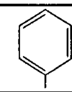
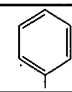
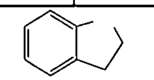
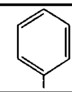
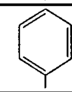
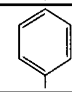
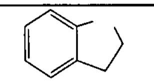
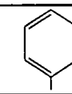
Substanz		X¹	X²	R³	R²	R¹	R⁴	X⁴	X³	R⁸	R⁶	R⁵	R⁷	R⁴'	R⁸'
	39.0														
	39.1	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
	39.2	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
	39.3	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
	39.4	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
	39.5	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
	39.6	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H

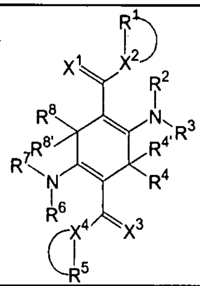
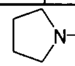
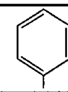
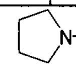
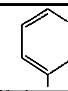
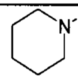
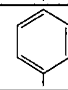
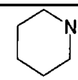
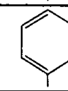
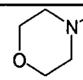
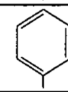
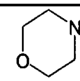
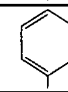
Substanz	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7	$R^{4'}$	$R^{8'}$
 39.7	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
 39.8	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
 39.9	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
 39.10	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
 39.11	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
 39.12	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
39.13	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H

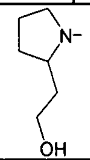
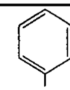
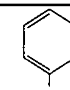
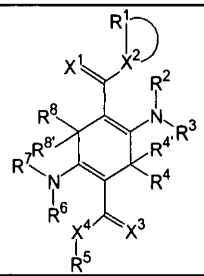
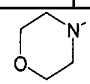
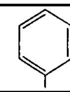
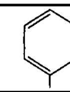
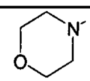
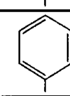
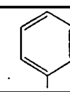
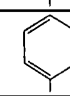
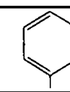
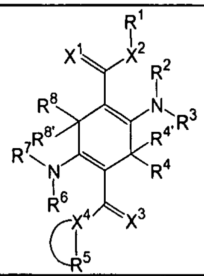
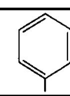
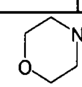
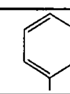
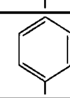
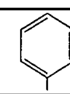
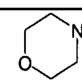
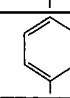
Substanz	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7	$R^{4'}$	$R^{8'}$
39.14	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
39.15	O	O		$-CF_2-$	-	H	O	O	H	$-CF_2-$	-		H	H
39.16	O	O			-	H	O	O	H		-		H	H
39.17	O	O			-	H	O	O	H		-		H	H
39.18	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
39.19	O	O		$-CH_2-$	-	H	O	O	H	$-CH_2-$	-		H	H
39.20	O	O		$-CF_2-$	-	H	O	O	H	$-CF_2-$	-		H	H
39.21	O	O			-	H	O	O	H		-		H	H
39.22	O	O			-	H	O	O	H		-		H	H

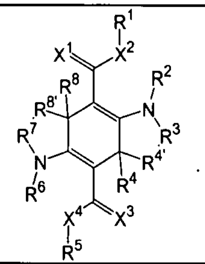
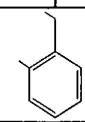
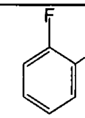
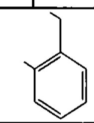
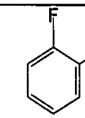
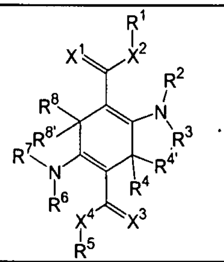
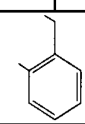
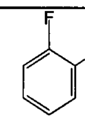
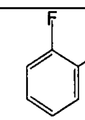
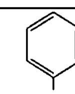
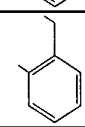
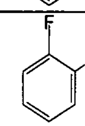
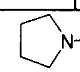
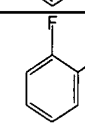
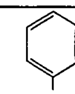
SUBSTANCE	X^1	X^2	R^3	R^2	R^1	R^4	X^4	X^3	R^8	R^6	R^5	R^7	$R^{4'}$	$R^{8'}$
 **25.0**														
25.1	O	O		$-CH_2-$		H	O	O	H	$-CH_3$	$-CH_3$		H	H
25.2	O	O		$-CH_2-$		H	N	O	H		$-CH_3$		H	H
 **32.0**														
32.1	O	O			$-CH_3$	H	N	O	H	$-CH_2-$			H	H
32.2	O	O			$-CH_3$	H	N	O	H	$-CH_2-$			H	H

Substance	X^1	R^1	X^2	R^2	R^3	R^4	R^5	X^3	X^4	R^6	R^7	R^8	$R^{4'}$	$R^{8'}$
 **40,0**														
40.1	O	$-CH_3$	O			H	$-CH_3$	O	O			H	H	H
40.2	O	$-CH_3$	O			H	$-CH_3$	O	O			H	H	H
40.3	O	$-CH_3$	O			H	$-CH_3$	O	O			H	H	H
40.4	O	$-CH_3$	O			H	$-CH_3$	O	O			H	H	H
 **26.0**														
26.1	O	$-CH_3$	O			H	$-CH_3$	O	O	$-CH_3$		H	H	H
26.2	O	$-CH_3$	O			H	$-CH_3$	O	O			H	H	H
26.3	O	$-CH_3$	O				$-CH_3$	O	O			H		H

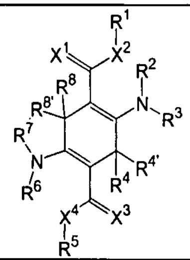
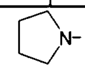
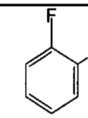
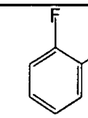
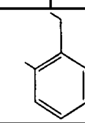
Substance	X^1	R^1	X^2	R^4	R^2	R^3	R^5	X^3	X^4	R^6	R^7	R^8	$R^{4'}$	$R^{8'}$
 **33.0**														
33.1	O	$-CH_3$	O	$-CH_3$			$-CH_3$	O	O			H	$-CH_3$	H
33.2	O	$-CH_3$	O				$-CH_3$	O	O			H		H

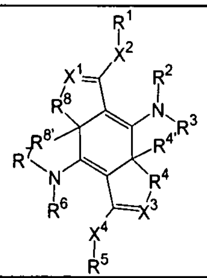
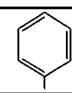
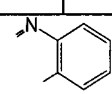
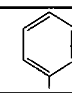
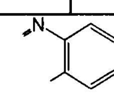
Substance	R^1	X^2	X^1	R^4	R^3	R^2	R^5	X^4	X^3	R^8	R^7	R^6	$R^{4'}$	$R^{8'}$
 **38.0**														
38.1			O	H		$-CH_3$			O	H		$-CH_3$	H	H
38.2			O	H		$-CH_3$			O	H		$-CH_3$	H	H
38.3			O	H		$-CH_3$			O	H		$-CH_3$	H	H

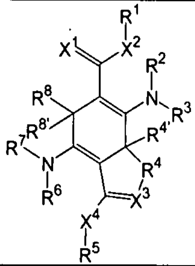
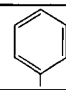
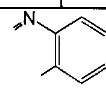
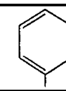
Substance	R^1	X^2	X^1	R^4	R^3	R^2	R^5	X^4	X^3	R^8	R^7	R^6	$R^{4'}$	$R^{8'}$
38.4			O	H		$-CH_3$			O	H		$-CH_3$	H	H
 **24.0**														
24.1			O	H		$-CH_3$	$-CH_3$	O	O	H		$-CH_3$	H	H
24.2			O	H			$-CH_3$	O	O	H			H	H
 **31.0**														
31.1	$-CH_3$	O	O	H		$-CH_3$			O	H		H	H	H
31.2	$-CH_3$	O	O	H					O	H		$-CH_3$	H	H

Substance	R^1	X^2	X^1	$R^{4'}$	R^3	R^2	R^5	X^4	X^3	$R^{8'}$	R^7	R^6	R^4	R^8
 **41.0**														
41.1	$-CH_3$	O	O				$-CH_3$	O	O				H	H
 **27.0**														
27.1	$-CH_3$	O	O				$-CH_3$	O	O	H			H	H
27.2	$-CH_3$	O	O						O	H			H	H

001.1578409

Substance	R^1	X^2	X^1	R^4	R^3	R^2	R^5	X^4	X^3	R^5	R^7	$R^{8'}$	$R^{4'}$	R^8
 34.0														
34.1			O	H		$-CH_3$	$-CH_3$	O	O				H	H

Substance	X^2	R^2	R^3	R^4	X^3	R^5	R^6	X^4	R^7	R^8	X^1	R^1	$R^{4'}$	$R^{8'}$
 43.0														
43.1	O	$-CH_3$				$-CH_3$	$-CH_3$	O				$-CH_3$	$-CH_3$	$-CH_3$

Substance	X^2	R^2	R^3	R^4	X^3	R^5	R^6	X^4	R^7	R^8	X^1	R^1	$R^{4'}$	$R^{8'}$
 **29.0**														
29.1	O	$-CH_3$				$-CH_3$	$-CH_3$	O		H	O	$-CH_3$	$-CH_3$	$-CH_3$

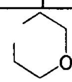
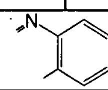
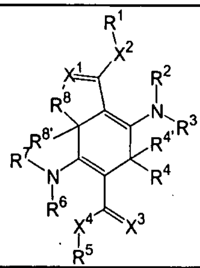
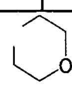
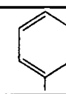
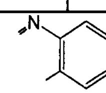
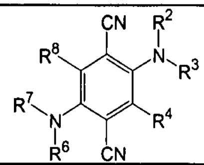
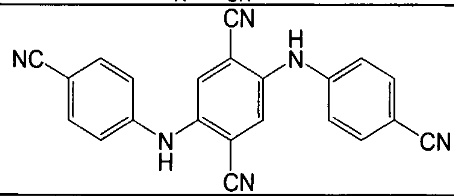
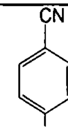
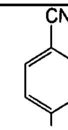
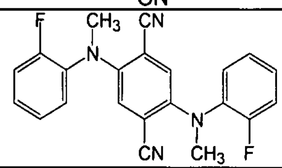
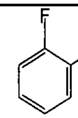
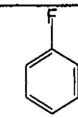
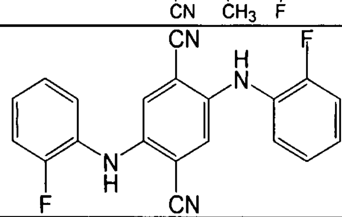
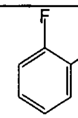
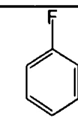
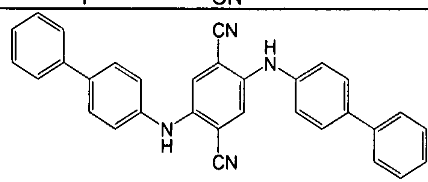
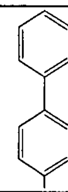
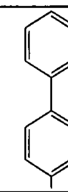
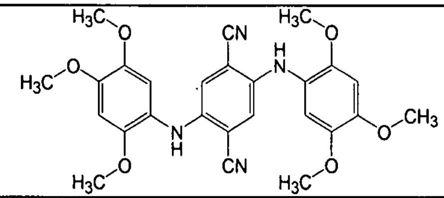
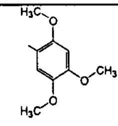
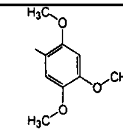
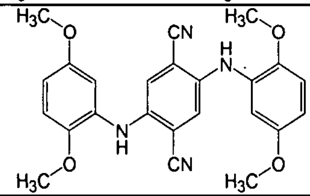
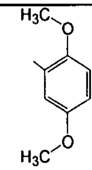
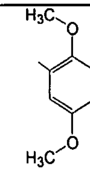
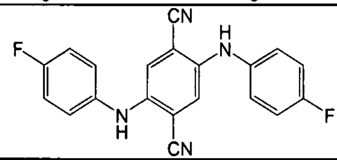
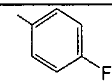
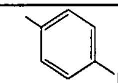
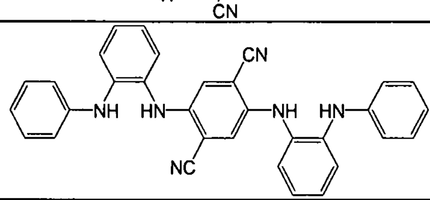
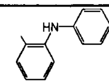
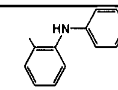
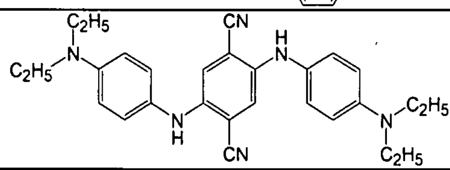
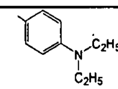
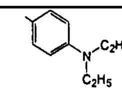
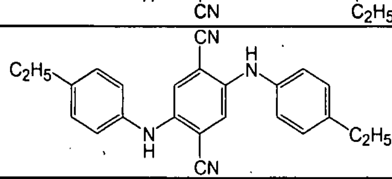
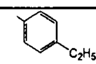
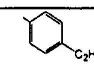
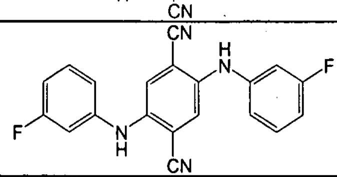
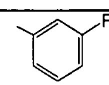
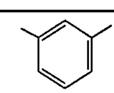
Substance	X^2	R^2	R^3	R^4	X^3	R^5	R^6	X^4	R^7	R^8	X^1	R^1	$R^{4'}$	$R^{8'}$
29.2	O					$-CH_3$	$-CH_3$	O		H	O	$-CH_3$	H	H
 **36.0**														
36.1	O			H	O	$-CH_3$	$-CH_3$	O				$-CH_3$	H	H

Table 3: Substituted 2,5-diaminoterephthalic acid dinitriles

Substance		R^3	R^2	R^4	R^8	R^6	R^7
	3.0						
	3.1		H	H	H	H	
	3.2		$-CH_3$	H	H	$-CH_3$	
	3.3		H	H	H	H	
	3.4		H	H	H	H	

Substance	R^3	R^2	R^4	R^8	R^6	R^7
 3.5		H	H	H	H	
 3.6		H	H	H	H	
 3.7		H	H	H	H	
 3.8		H	H	H	H	
 3.9		H	H	H	H	
 3.10		H	H	H	H	
 3.11		H	H	H	H	

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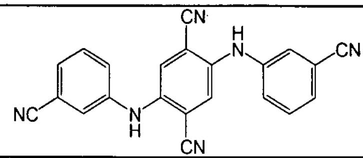
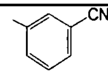
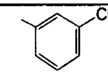
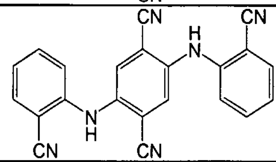
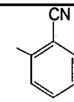
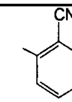
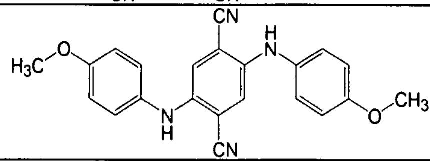
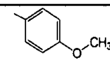
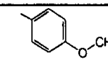
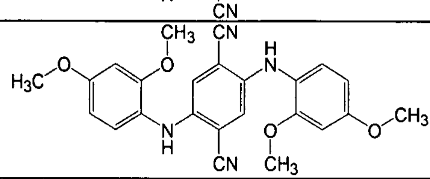
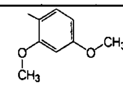
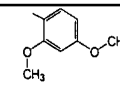
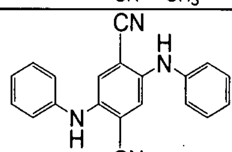
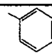
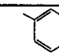
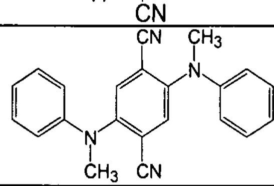
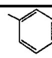
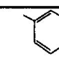
<tr><td></td><td><u>3.12</u></td><td></td><td>H</td><td>H</td><td>H</td><td>H</td><td></td></tr>
<tr><td></td><td><u>3.13</u></td><td></td><td>H</td><td>H</td><td>H</td><td>H</td><td></td></tr>
<tr><td></td><td><u>3.14</u></td><td></td><td>H</td><td>H</td><td>H</td><td>H</td><td></td></tr>
<tr><td></td><td><u>3.15</u></td><td></td><td>H</td><td>H</td><td>H</td><td>H</td><td></td></tr>
<tr><td></td><td><u>3.16</u></td><td></td><td>H</td><td>H</td><td>H</td><td>H</td><td></td></tr>
<tr><td></td><td><u>3.17</u></td><td></td><td>-CH₃</td><td>H</td><td>H</td><td>-CH₃</td><td></td></tr>
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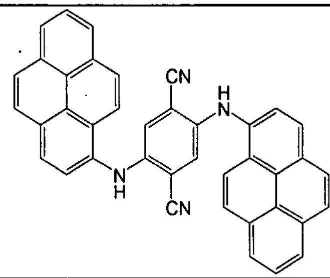
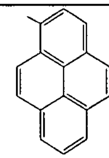
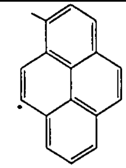
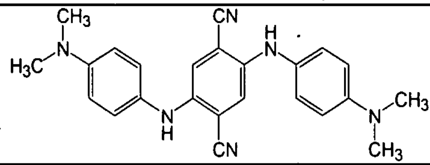
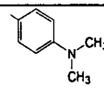
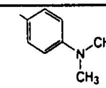
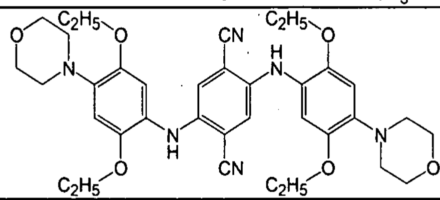
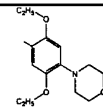
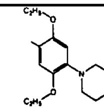
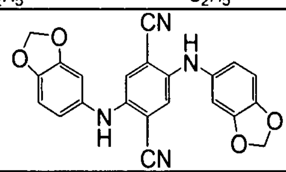
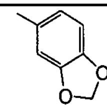
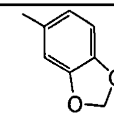
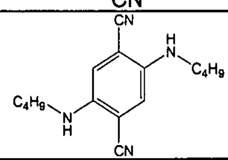
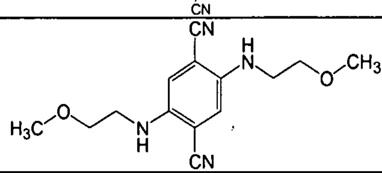
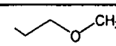
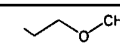
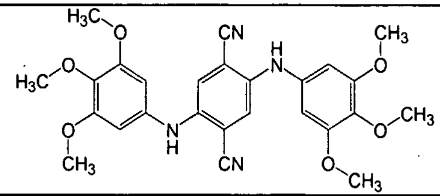
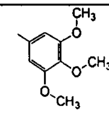
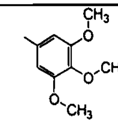
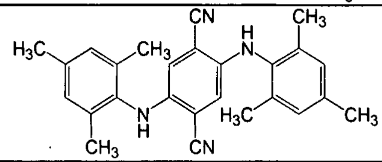
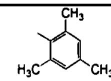
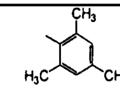
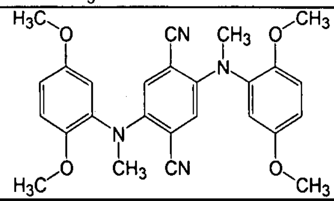
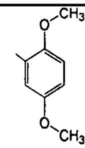
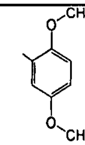
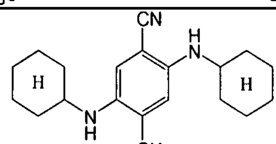
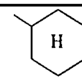
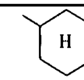
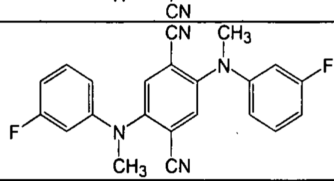
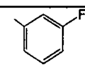
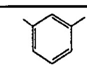
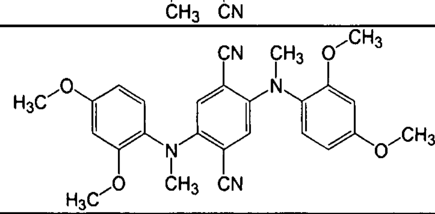
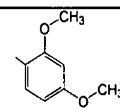
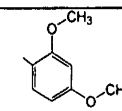
Substance	R^3	R^2	R^4	R^8	R^6	R^7
 **3.18**		H	H	H	H	
 **3.19**		H	H	H	H	
 **3.20**		H	H	H	H	
 **3.21**		H	H	H	H	
 **3.22**	$-C_4H_9$	H	H	H	H	$-C_4H_9$
 **3.23**		H	H	H	H	

Substance	R^3	R^2	R^4	R^8	R^6	R^7
 3.24		H	H	H	H	
 3.25		H	H	H	H	
 3.26		$-CH_3$	H	H	$-CH_3$	
 3.27		H	H	H	H	
 3.28		$-CH_3$	H	H	$-CH_3$	
 3.29		$-CH_3$	H	H	$-CH_3$	

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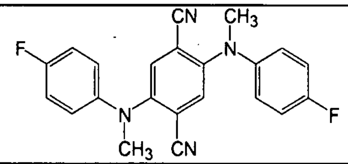
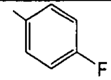
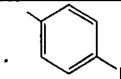
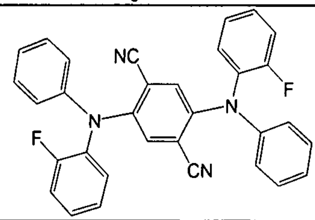
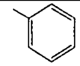
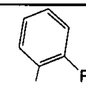
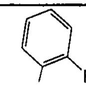
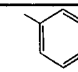
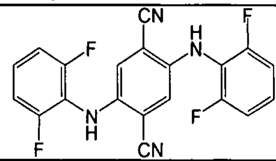
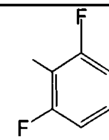
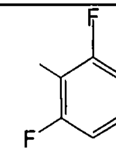
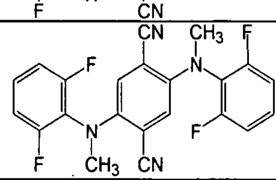
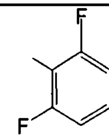
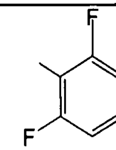
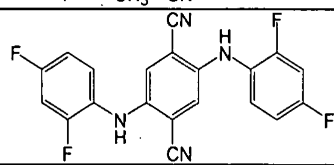
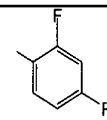
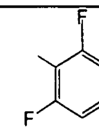
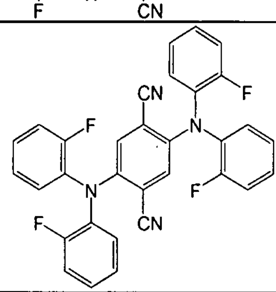
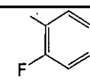
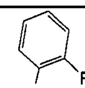
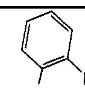
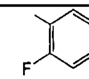
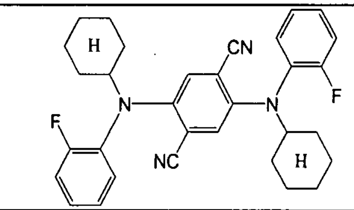
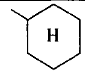
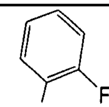
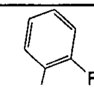
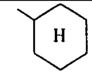
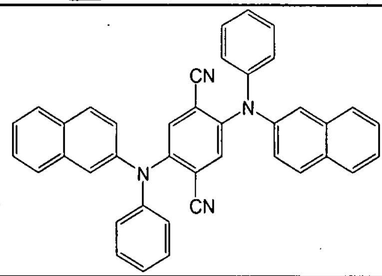
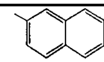
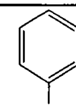
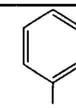
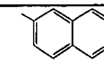
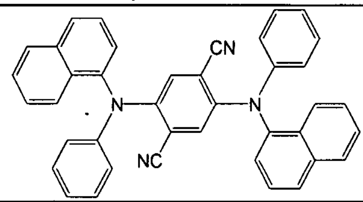
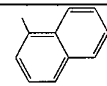
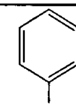
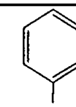
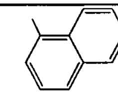
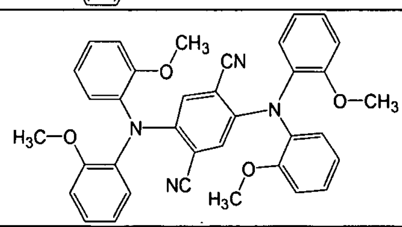
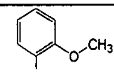
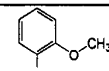
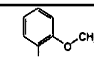
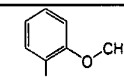
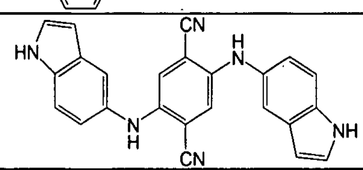
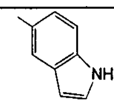
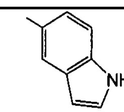
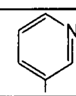
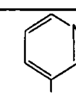
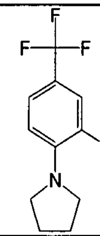
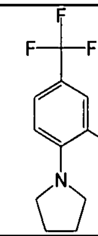
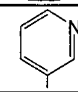
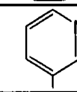
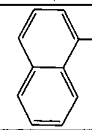
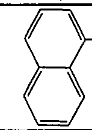
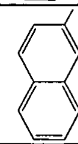
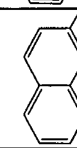
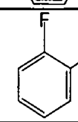
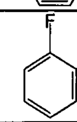
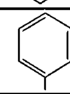
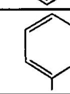
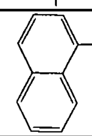
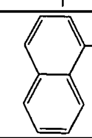
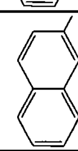
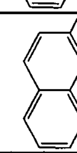
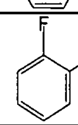
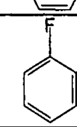
 3.30		-CH_3	H	H	-CH_3	
 3.31			H	H		
 3.32		H	H	H	H	
 3.33		-CH_3	H	H	-CH_3	
 3.34		H	H	H	H	
 3.35			H	H		

Substance	R^3	R^2	R^4	R^8	R^6	R^7
 3.36			H	H		
 3.37			H	H		
 3.38			H	H		
 3.39			H	H		
 3.40		H	H	H	H	
3.41		$-CH_3$	H	H	$-CH_3$	

Substance	R^3	R^2	R^4	R^8	R^6	R^7
3.42		$-CH_3$	H	H	$-CH_3$	
3.43		$-CH_3$	H	H	$-CH_3$	
3.44		$-CH_3$	H	H	$-CH_3$	
3.45		$-CH_3$	H	H	$-CH_3$	
3.46		$-CH_3$	H	H	$-CH_3$	
3.47		$-CF_3$	H	H	$-CF_3$	
3.48		$-CF_3$	H	H	$-CF_3$	
3.49		$-CF_3$	H	H	$-CF_3$	
3.50		$-CF_3$	H	H	$-CF_3$	

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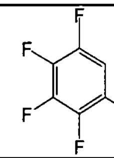
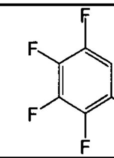
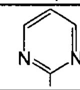
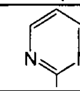
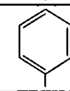
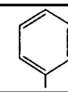
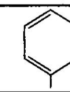
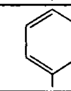
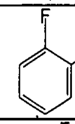
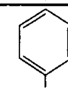
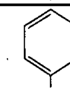
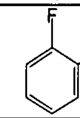
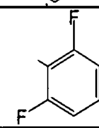
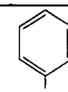
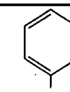
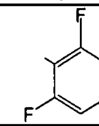
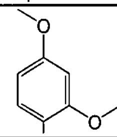
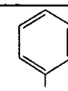
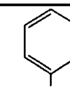
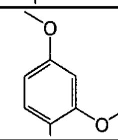
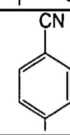
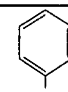
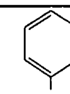
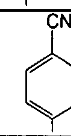
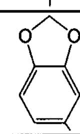
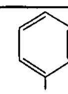
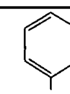
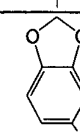
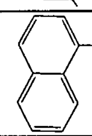
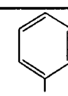
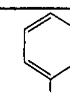
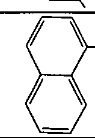
3.51		-CF_3	H	H	-CF_3	
3.52		-CF_3	H	H	-CF_3	
3.53			H	H		
3.54			H	H		
3.55			H	H		
3.56			H	H		
3.57			H	H		
3.58			H	H		
3.59			H	H		

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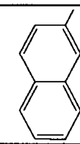
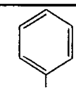
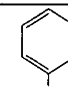
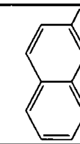
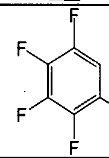
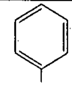
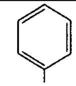
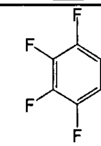
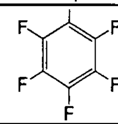
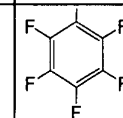
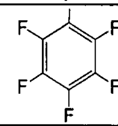
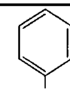
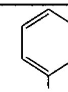
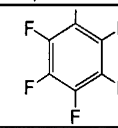
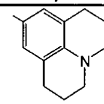
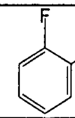
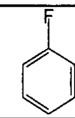
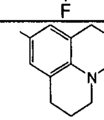
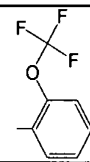
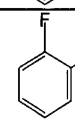
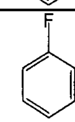
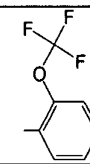
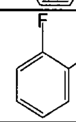
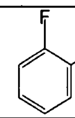
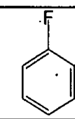
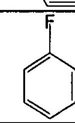
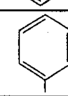
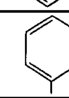
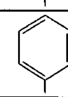
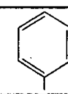
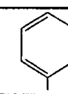
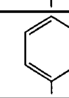
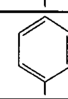
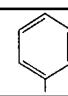
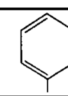
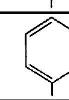
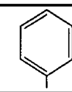
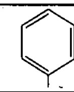
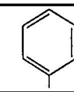
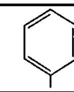
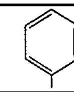
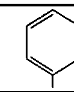
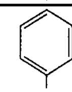
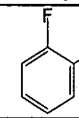
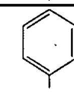
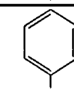
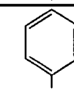
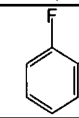
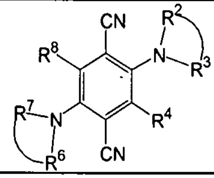
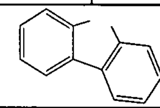
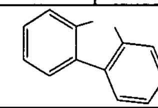
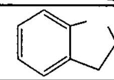
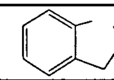
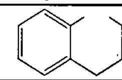
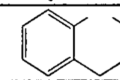
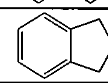
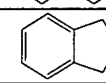
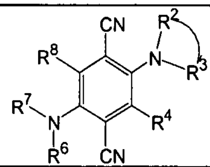
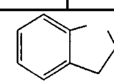
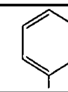
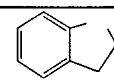
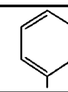
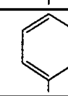
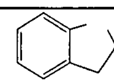
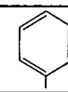
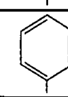
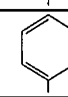
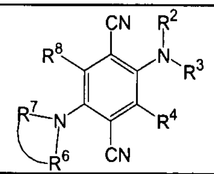
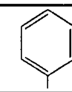
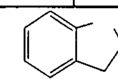
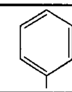
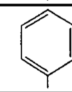
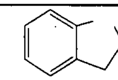
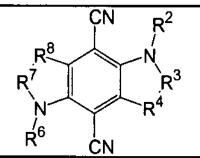
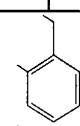
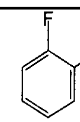
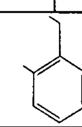
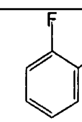
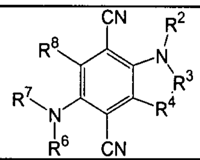
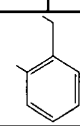
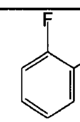
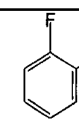
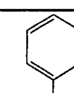
Substance	R^3	R^2	R^4	R^8	R^6	R^7
3.60			H	H		
3.61			H	H		
3.62		$-CH_3$	H	H	$-CH_3$	
3.63			H	H		
3.64			H	H		
3.65			H	H		
3.66			H	H		
3.67		H	H	H	H	
3.68			H	H		
3.69		$-CH_3$			$-CH_3$	

Substance	R^3	R^2	R^4	R^8	R^6	R^7
3.70						
3.71						

Substance	R^2	R^3	R^4	R^6	R^7	R^8
 48.0						
48.1			H			H
48.2			H			H
48.3			H			H
48.4			H			H

Substance	R^2	R^3	R^4	R^6	R^7	R^8
 44.0						
44.1			H	$-CH_3$		H
44.2			H			H
44.3						H

Substance	R^8	R^2	R^3	R^6	R^7	R^4
 46.0						
46.1	H	$-CH_3$				H
46.2	H					H

Substance	R^4	R^3	R^2	R^8	R^7	R^6
 49.0						
49.1						
 45.0						
45.1				H		

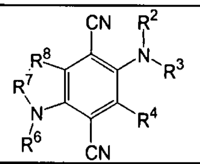
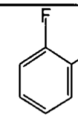
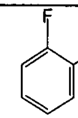
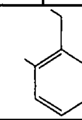
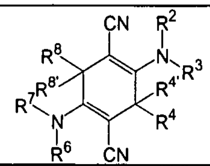
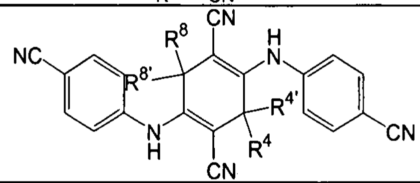
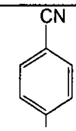
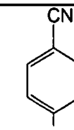
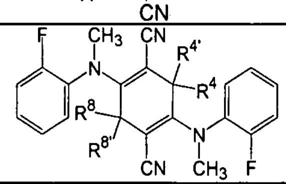
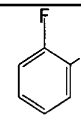
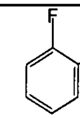
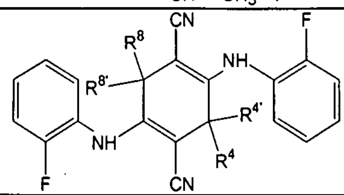
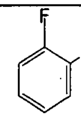
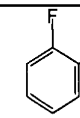
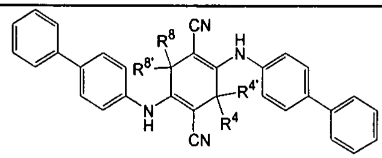
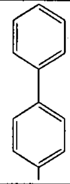
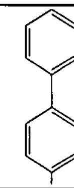
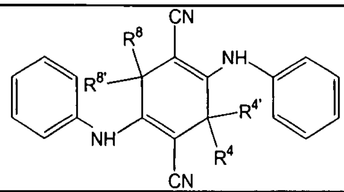
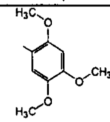
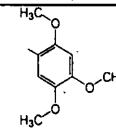
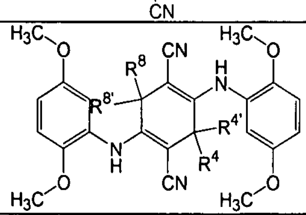
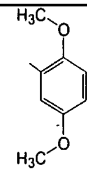
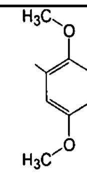
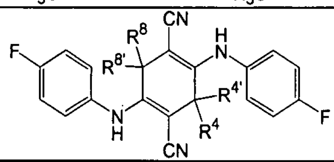
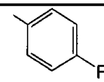
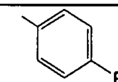
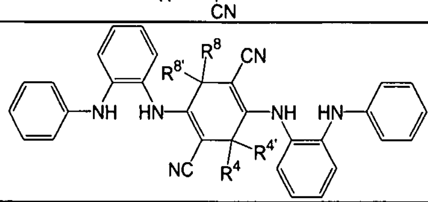
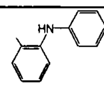
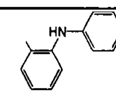
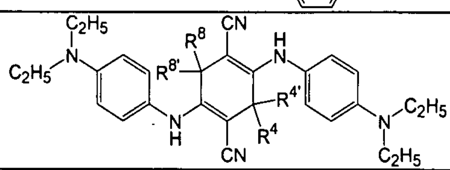
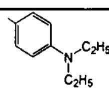
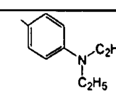
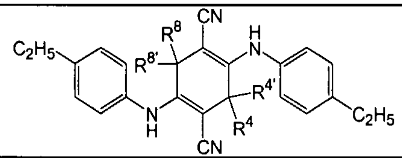
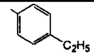
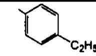
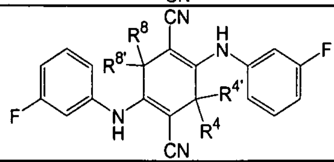
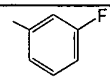
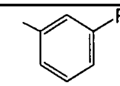
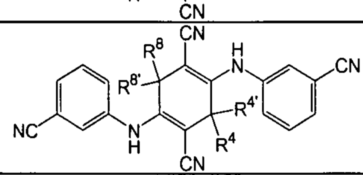
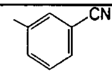
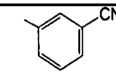
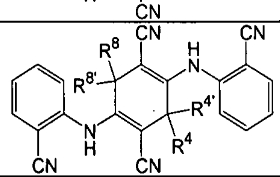
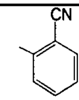
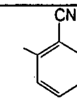
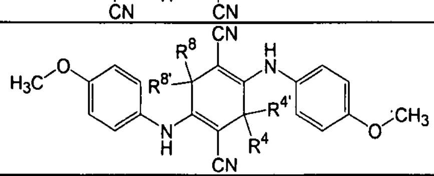
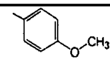
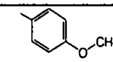
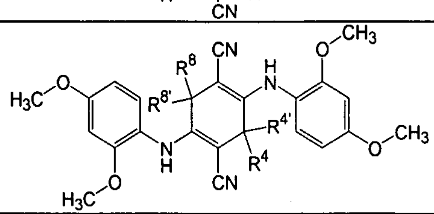
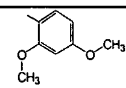
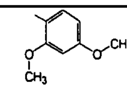
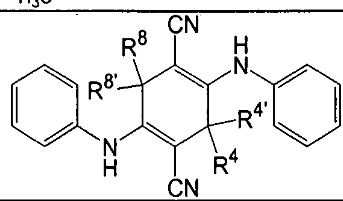
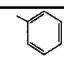
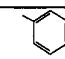
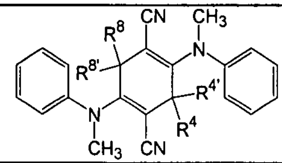
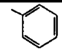
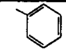
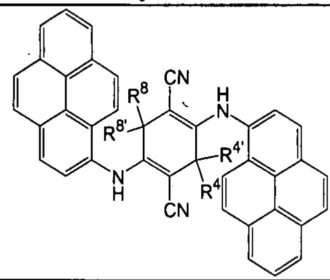
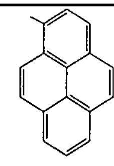
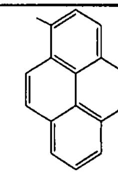
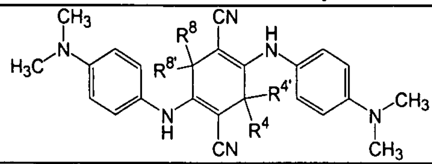
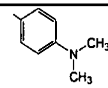
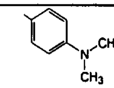
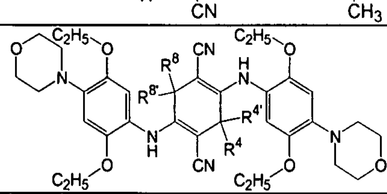
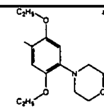
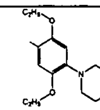
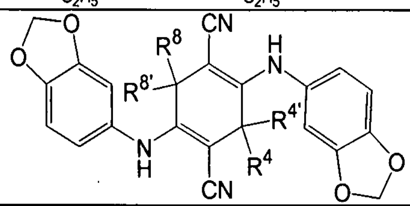
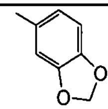
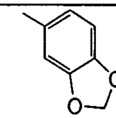
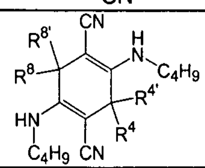
Substance	R^4	R^3	R^2	R^8	R^7	R^6
 **47.0**						
47.1	H					

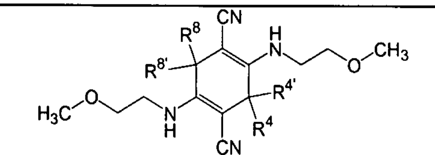
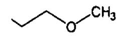
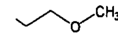
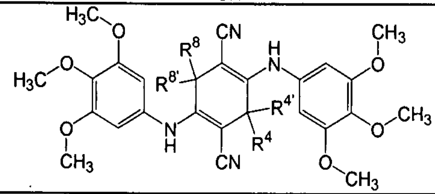
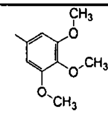
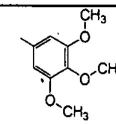
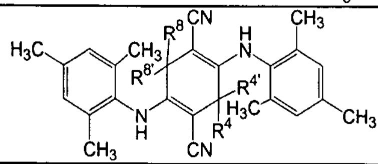
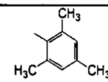
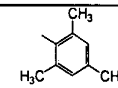
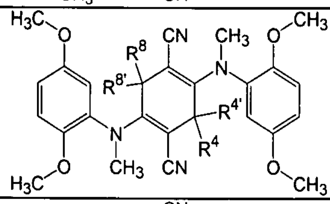
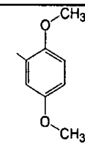
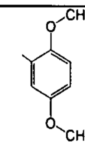
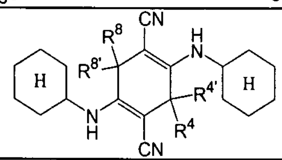
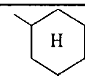
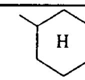
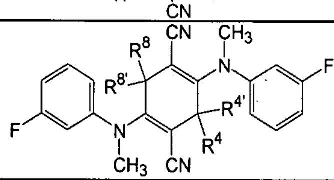
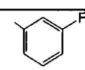
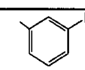
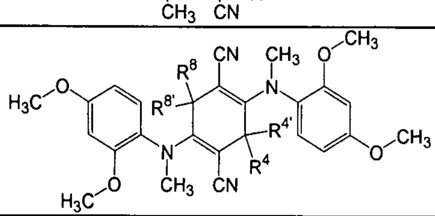
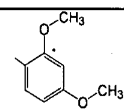
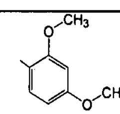
Table 4: Substituted 2,5-diamino-3,6-dihydroterephthalic acid dinitriles

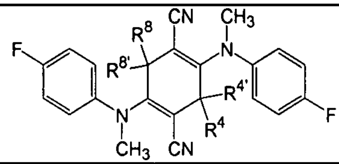
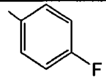
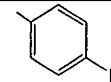
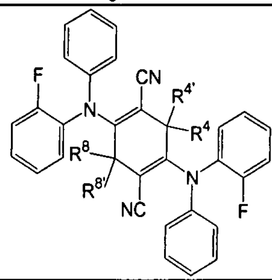
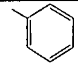
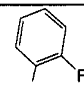
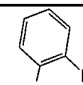
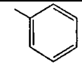
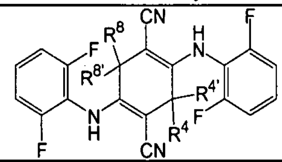
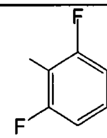
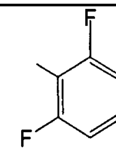
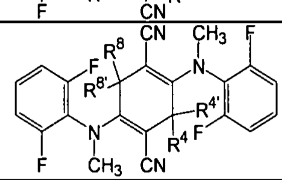
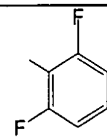
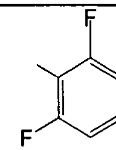
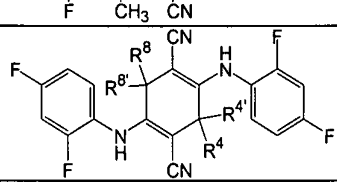
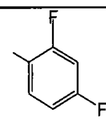
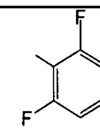
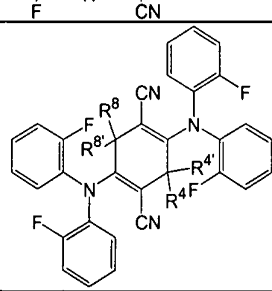
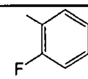
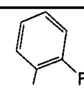
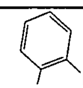
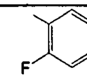
Substance	R^3	R^2	R^4	$R^{4'}$	R^8	$R^{8'}$	R^6	R^7
 **4.0**			$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		
 **4.1**		H	$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$	H	
 **4.2**		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$	
 **4.3**		H	$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$	H	

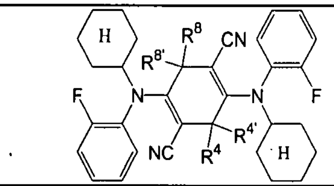
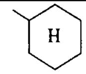
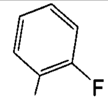
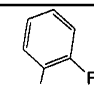
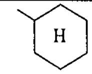
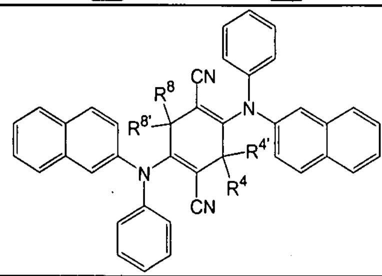
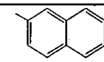
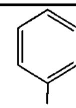
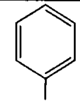
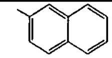
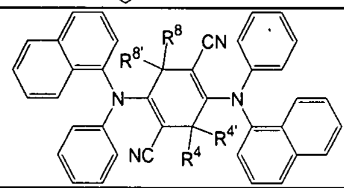
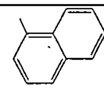
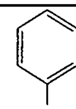
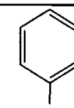
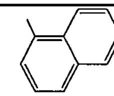
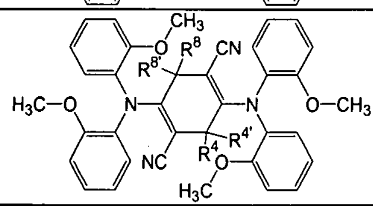
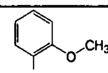
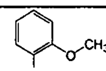
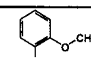
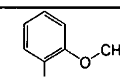
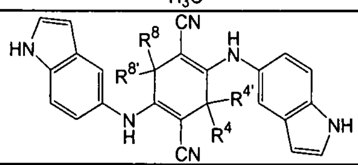
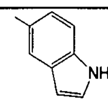
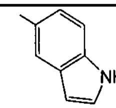
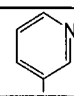
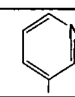
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 4.4		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.5		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.6		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.7		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.8		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.9		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$

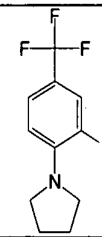
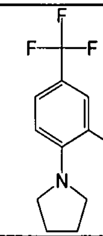
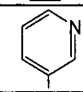
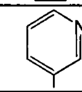
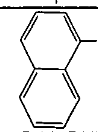
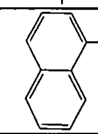
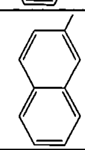
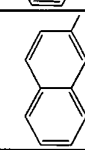
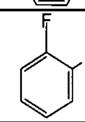
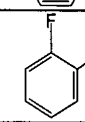
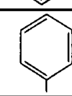
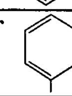
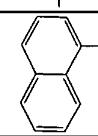
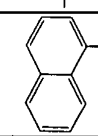
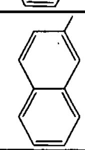
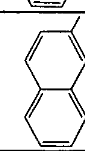
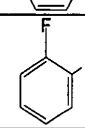
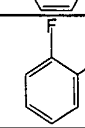
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 4.10		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.11		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.12		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.13		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.14		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.15		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.16		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$

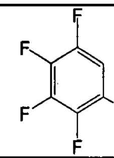
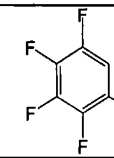
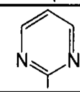
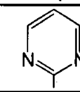
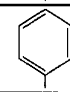
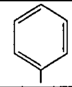
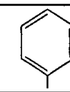
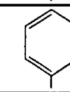
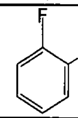
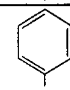
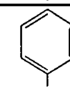
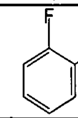
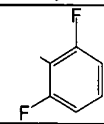
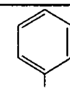
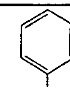
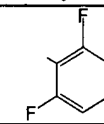
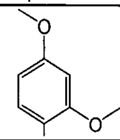
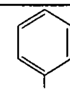
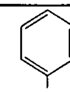
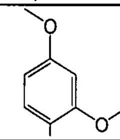
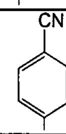
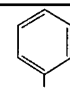
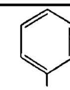
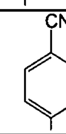
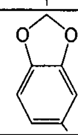
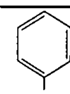
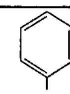
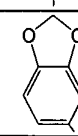
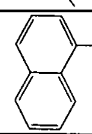
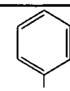
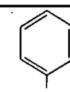
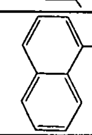
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 4.17		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
 4.18		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.19		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.20		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.21		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.22	$-C_4H_9$	H	$-CH_3$	$-CH_3$	H	$-C_4H_9$	$-CH_3$	$-CH_3$

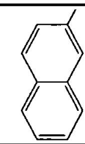
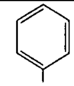
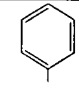
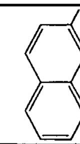
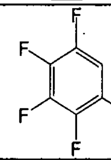
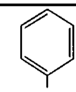
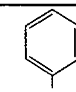
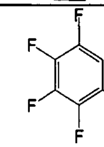
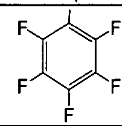
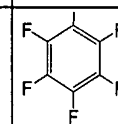
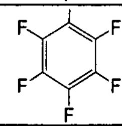
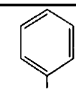
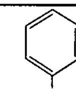
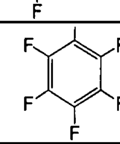
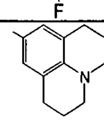
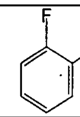
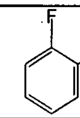
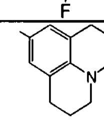
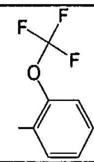
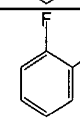
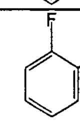
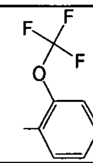
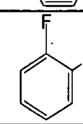
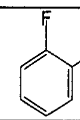
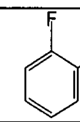
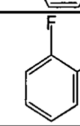
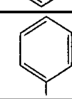
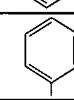
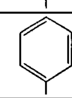
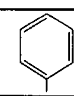
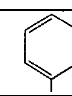
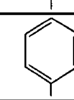
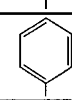
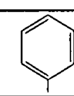
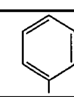
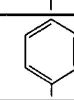
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 4.23		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.24		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.25		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.26		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
 4.27		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 4.28		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
 4.29		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$

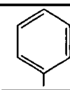
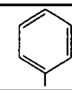
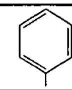
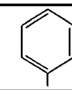
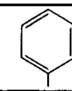
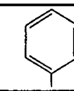
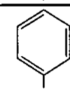
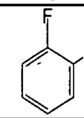
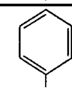
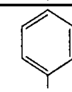
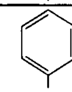
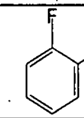
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 **4.30**		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
 **4.31**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 **4.32**		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
 **4.33**		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
 **4.34**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$

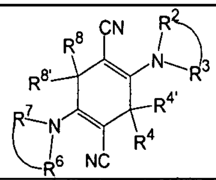
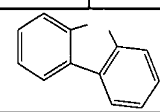
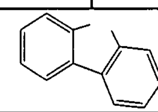
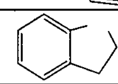
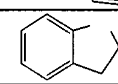
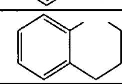
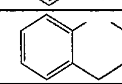
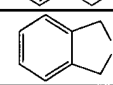
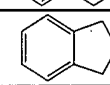
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
 **4.35**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
 **4.36**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
 **4.37**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
 **4.38**			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
 **4.39**		H	$-CH_3$	$-CH_3$	H		$-CH_3$	$-CH_3$
4.40		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$

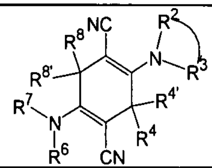
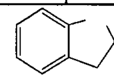
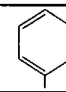
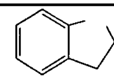
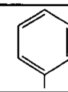
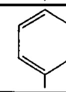
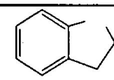
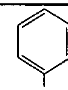
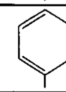
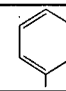
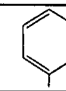
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
4.41		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
4.42		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
4.43		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
4.44		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
4.45		$-CH_3$	$-CH_3$	$-CH_3$	$-CH_3$		$-CH_3$	$-CH_3$
4.46		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$
4.47		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$
4.48		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$
4.49		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$

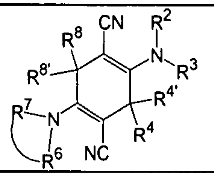
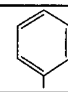
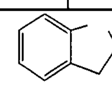
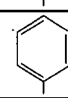
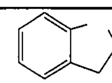
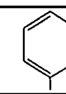
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
4.50		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$
4.51		$-CF_3$	$-CH_3$	$-CH_3$	$-CF_3$		$-CH_3$	$-CH_3$
4.52			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.53			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.54			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.55			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.56			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.57			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.58			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$

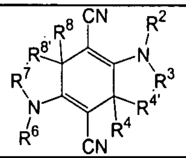
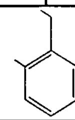
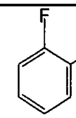
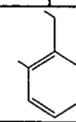
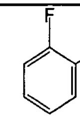
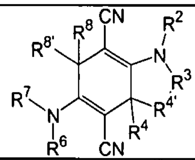
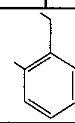
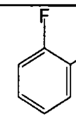
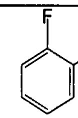
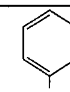
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
4.59			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.60			$-CH_3$	$-CH_3$			$-CH_3$	$-CH_3$
4.61		$-CH_3$	$-CH_3$	H	$-CH_3$		$-CH_3$	$-CH_3$
4.62			$-CH_3$	H			$-CH_3$	$-CH_3$
4.63			$-CH_3$	H			$-CH_3$	$-CH_3$
4.64			$-CH_3$	H			$-CH_3$	$-CH_3$
4.65			$-CH_3$	H			$-CH_3$	$-CH_3$
4.66		H	$-CH_3$	H	H		$-CH_3$	$-CH_3$
4.67			$-CH_3$	H			$-CH_3$	$-CH_3$
4.68		$-CH_3$			$-CH_3$		$-CH_3$	$-CH_3$

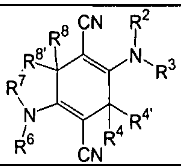
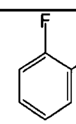
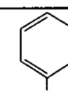
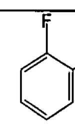
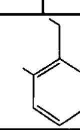
Substance	R^3	R^2	R^4	R^8	R^6	R^7	$R^{4'}$	$R^{8'}$
<u>4.69</u>							$-CH_3$	$-CH_3$
<u>4.70</u>							$-CH_3$	$-CH_3$

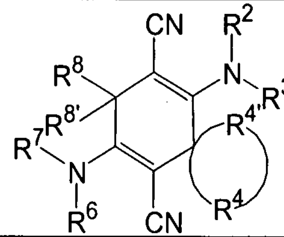
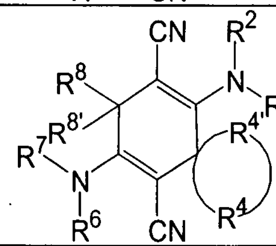
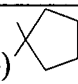
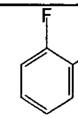
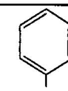
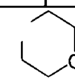
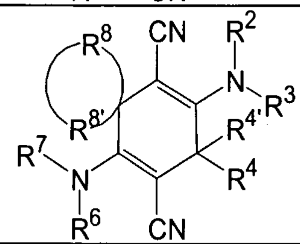
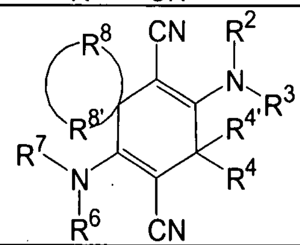
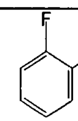
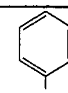
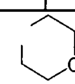
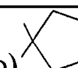
Substance	R^2	R^3	R^4	R^6	R^7	R^8	$R^{8'}$	$R^{4'}$
 <u>56.0</u>								
<u>56.1</u>			$-CH_3$			$-CH_3$	$-CH_3$	$-CH_3$
<u>56.2</u>			$-CH_3$			$-CH_3$	$-CH_3$	$-CH_3$
<u>56.3</u>			$-CH_3$			$-CH_3$	$-CH_3$	$-CH_3$
<u>56.4</u>			$-CH_3$			$-CH_3$	$-CH_3$	$-CH_3$

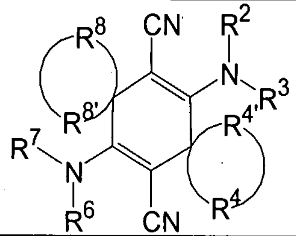
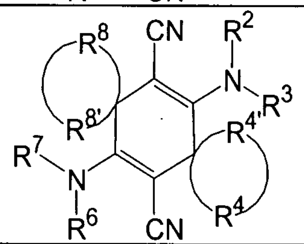
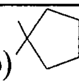
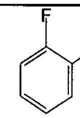
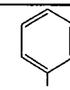
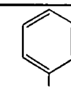
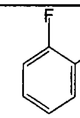
Substance	R^2	R^3	R^6	R^7	R^8	$R^{8'}$	R^4	$R^{4'}$
 **50.0**								
50.1			-CH_3		-CH_3	-CH_3	-CH_3	-CH_3
50.2					-CH_3	-CH_3	-CH_3	-CH_3
50.3						-CH_3		-CH_3

SUBSTANCE	R^8	$R^{8'}$	R^3	R^6	R^7	R^4	$R^{4'}$	R^2
 **53.0**								
53.1	-CH_3	-CH_3				-CH_3	-CH_3	-CH_3
53.2	-CH_3	-CH_3				-CH_3	-CH_3	

Substance	R4'	R3	R2	R8'	R7	R6	R4	R8
 **57.0**								
57.1							$-CH_3$	$-CH_3$
 **51.0**								
51.1				H			$-CH_3$	$-CH_3$

Substance	R4	R4'	R3	R2	R6	R7	R8'	R8
 **54.0**								
54.1	$-CH_3$	$-CH_3$						$-CH_3$

Substance	R^4	$R^{4'}$	R^3	R^2	R^6	R^7	$R^{8'}$	$R^{8'}$
 52.0								
 52.1	(spiro) 						$-CH_3$	$-CH_3$
 55.0								
 55.1	$-CH_3$	$-CH_3$					(spiro) 	

Substance	R^4	$R^{4'}$	R^3	R^2	R^6	R^7	$R^{8'}$	$R^{8'}$
 **58.0**								
 **58.1**	(spiro) 						(spiro)